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THE

GLASGOW MEDICAL JOURNAL.

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GLASGOW MEDICAL JOURNAL.

EDITED BY

GEORGE HENRY EDINGTON, M.D.,

FOR THE

Glasgow and West of Scotland Medical Association.

JULY TO DECEMBER, 1913.

VOL. LXXX.

GLASGOW:
ALEX. MACDOUGALL, 70 MITCHELL STREET.
LONDON: H. K. LEWIS, 136 GOWER STREET.
1913.

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GLASGOW MEDICAL JOURNAL.

No. I. July, 1913.

ORIGINAL ARTICLES.

THINGS OPHTHALMIC NEW AND OLD.[1]

By A. FREELAND FERGUS, M.D., F.R.F.P.S.G.,
Surgeon, Glasgow Eye Infirmary.

In laying down office I again desire to acknowledge my indebtedness to the office-bearers and members of this Society for the honour which they did me two years ago in electing me to the chair. I am glad to believe that the Society during that time has held its own, and I venture to think that under the able administration of the Secretary, Dr. Young, its proceedings have by no means lost in value. The president is more or less a figure-head; the actual direction of such a society is always in the hands of the secretary and other office-bearers; and I hope they will allow me to express to them my thanks for the smoothness with which the affairs of the Society have been conducted during the past two years.

When I took the chair I brought under your notice some of the leading facts in connection with the development of

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[1] Valedictory address delivered to the Medico-Chirurgical Society of Glasgow on 2nd May, 1913.

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the Glasgow School of Medicine. To-night I would like to dwell upon some points which I consider of great importance as regards ophthalmology. In the first place, I wish to illustrate and emphasise what I have elsewhere indicated as the difference between visual acuteness and form sense. It is almost incredible that up to the days of my own teacher, the late Professor Snellen, there had been no attempt to standardise visual acuteness, unless indeed we take such haphazard methods as the use of Jaeger's hand types, which were the only types in use when I entered the Eye Infirmary as a student in 1879.

Snellen's types have become so universally used both on the Continent of Europe and in America that they are likely to be for many years to come the standard of visual acuteness. It is quite true that the types of Landolt form a much more delicate test both for visual acuteness and as an ultimate proof of the accuracy of a refraction correction. Still, Snellen's are so convenient and so easily used that it is not surprising to find that Landolt's, although a much more refined test, have not as yet come into general use. I do not intend to say a single word to-night as to the accuracy of Snellen's types. We accept them as a standard of visual acuteness of a definite kind, but at the same time it must be remembered that they are only an arbitrary standard, and by no means an absolute measurement. This fact constitutes the chief difficulty which we have in estimating the working usefulness of an eye in terms of visual acuteness expressed in Snellen's scale. To my own mind the problem is absolutely insoluble, notwithstanding the very learned papers of Mr. Percival of Newcastle-on-Tyne and of Mr. Berry of Edinburgh. If a patient reads the types at six metres, which Snellen said should be seen at six metres, then, with a careless use of language which is not in the least justifiable, he is said to have normal visual acuteness. Snellen believed that to be the typically perfect, very much as Fahrenheit believed that the zero of his scale was the lowest obtainable temperature. Snellen's $\frac{6}{6}$ is said to be normal vision, and I fear that that phrase often gives rise in thought to the idea that that is the average for mankind. Etymologically the word "normal" may mean a conformity to a certain standard. That is not, however, the sense in which it is generally understood in this connection. Just as we say the normal temperature of the human body is 98·4, meaning thereby that that is the average for healthy mankind, so people are apt to understand when we say that the visual acuteness is normal that that is the average visual acuteness of mankind. It is not the average; it is merely an arbitrary measurement made by Professor Snellen on certain data—that is all. The greatest confusion sometimes arises in the lay mind by taking the word normal as applied to visual acuteness in the sense of average. For example, it is not an uncommon experience to find that a certain workman is supposed to be unfit for work because he has only one-half, or say one-third, of the normal visual acuteness. A layman hearing such a statement, says to himself—" Dear me, how very much below the average of visual acuteness that man is; he certainly is not fit for very much." Now, it so happens that one-half of Snellen, or even one-third, is probably above the average of efficient mankind, and we cannot but think there might be a very serious miscarriage of justice from the careless use of language by using in this sense the word "normal," when the phrase " typically perfect " might perhaps more properly be employed. We may never be able to arrive at what is the normal in the sense of being the average vision of mankind. Notwithstanding the great respect which I entertain alike for Mr. Percival and Mr. Berry, I cannot but think that any attempt to make, so far as a man's earning capacity is concerned, a mathematical function of the visual acuteness, is entirely futile. I personally have known a man at the bottom of a coal pit with visual acuteness of only $\frac{1}{30}$ earning excellent wages. That is only one of a number of such cases that I once took the trouble to collect. They were communicated to the British Medical Association at its Toronto meeting. Individual human action based on volition after all cannot be expressed by any mathematical formula.

But the difficulty is much increased when we come to differentiate between what I have elsewhere called visual acuteness and the form sense. It is a distinction which I have made for a considerable number of years to the large classes of University Ophthalmic students it has been my privilege to teach as an extra-mural teacher, and it no doubt will ultimately find its way into the text-books. It is easily enough understood, and if you give me patient ears but for a short time I will make perfectly clear, even to the most uninitiated in the domain of ophthalmological physics, the exact difference between visual acuteness and the form sense. All ophthalmic and physiological writers up till now have failed to make a distinction, at any rate in their writings; and in 1911, when I gave evidence before the

Departmental Committee of the Board of Trade on Sight Tests, it was a distinction which seemed to be entirely new to the members of the Committee, for all their witnesses and all the members of Committee always spoke of the form sense as synonymous with visual acuteness. The two must be carefully distinguished. Visual acuteness is a function of the macular area only: it is that power by which we read and write and distinguish visually such things as music score. That is all that I mean by visual acuteness. Let me just recall an experiment which I have often shown to classes of students, and to which I directed the attention of the Committee of the Board of Trade. If a person look at a word in the middle of a page of writing he will see the word, and possibly a few letters in its immediate neighbourhood; the rest of the page he will be quite unable to decipher. Just for a little space round the word at which he is looking he will clearly see letters, but on no other part of the page, unless he change the point of fixation. That is visual acuteness. While, however, he is looking at the original fixation point steadily he also can discern quite distinctly the forms of all other objects in his immediate neighbourhood. He can see various articles of furniture. He might see that there are persons in the same apartment. He can tell quite well perhaps whether those persons are men or women, although he cannot recognise them. The power of recognition also probably depends upon visual acuteness. That illustrates what I mean by the form sense. It is this form sense which is the important function of vision for most kinds of manual employment, and which is also chiefly used in such occupations as navigation. Take, for example, a man hewing stone. If he wishes to examine the texture of the stone as a geologist would do, he will require to use his visual acuteness. If he is merely distinguishing it from other material, such as the earth and clay, from which he is getting it, then the visual acuteness is probably not used at all; it is entirely that which I call form sense. A radical blunder is made when we attempt to express the working power of any man, so far as vision is concerned, in terms of visual acuteness. Working power, at anyrate, for manual employment has very little, if anything, to do with visual acuteness; it has to do with this form sense, or, as I prefer to call it, difference of back-ground sense. Herein is just the mistake which has been made by the recent Departmental Committee of the Board of Trade. They say, in spite of all facts to the contrary, that unless a man has got visual acuteness of $\frac{5}{5}$ in one eye and $\frac{5}{15}$ in the other, that he is not fit for navigation. Any such statement is simply not true. Navigational power so far as vision is concerned ought not to be expressed in terms of visual acuteness at all. For example, take my own sight. My visual acuteness, without correction, as measured by Snellen's scale, is something like two letters of $\frac{6}{18}$, and yet I can see a can-buoy two or three miles away perfectly distinctly and clearly. If we take the height of the can-buoy as being, say, three feet above the surface of the water, and that the distance at which I see it is only two miles away, although as a matter of fact it is a great deal more, then the angle subtended by the said can-buoy at the first nodal point of my eye is considerably less than one minute. A man who has sight like that is said by the Board of Trade not to be able to navigate a ship, simply because they have gone on an entirely wrong basis, and have tried to express navigational ability in terms of visual acuteness. I, for example, can see a bush in a park four nautical miles off. Now, if we take the bush as being 20 feet high, that means that it subtends at the first nodal point of my eye an angle of about 4 minutes. Yet the Board of Trade say that a man who has sight like that, who can see a can-buoy not more than 3 feet high at two miles, and who can see a bush in a park four miles away, has not sufficiently good sight for purposes of navigation. Snellen's $\frac{6}{6}$ gives a 5-minute angle at 20 feet: if in visual acuteness a man has perfect vision with his 5-minute angle, he is considered safe for navigation; but a man who can absolutely distinguish a can-buoy subtending an angle of only 1 minute, or $\frac{1}{5}$ of Snellen's standard, is, according to the Board of Trade, quite unfit to be entrusted with a ship. It seems to me nonsense, and the confusion has arisen because the Board of Trade have made navigation depend upon visual acuteness rather than upon the form sense. I have so recently elsewhere elaborated this idea that I do not here develop it further.

I wish, in the second place, to call the attention of the Society to that part of the field of vision which I have called the field of visual acuteness. The method of testing this is a little difficult for it requires a considerable degree of intelligence on the part of the person who is being examined. On one occasion I got a number of the students in my class each to undergo the examination, and I beg to show you some of the results. A number of letters were printed on slips of paper, and the student who was undergoing examination was directed to shut one eye, to look steadily at a letter at the very centre of the page, and to draw his pencil round all those letters which he was able to see at the same time. That delimited the fields of visual acuteness. I do not agree that the function of visual acuteness is a function which gradually decreases as we go towards the periphery of the field; in other words, I do not accept the graph given in rectangular co-ordinates in Mr. Parson's elementary text-book. Visual acuteness in the true sense of the term is limited to the macula. There is no doubt a certain peripheral acuteness, but that depends purely on the light sense. Graphs of the field of visual acuteness are extremely interesting. I take one of the simplest that I have obtained, namely, that of Mr. H. C. S. The graph in his case is almost an ellipse, the major axis being horizontal and the minor axis vertical. The paper was held at 2 feet from his eye when the observation was made. The major axis measures $\frac{15}{16}$ of an inch and the minor $\frac{11}{16}$ of an inch, the angular opening therefore of the field of visual acuteness in the horizontal meridian for 2 feet is easily calculated: it works out at 2 degrees, 14 minutes, 20 seconds, and the vertical for the same distance works out at 1 degree, 48 minutes, 40 seconds—a very small angular opening in the field of vision. Elsewhere I hope to publish some further observations on this field of visual acuteness. As you have seen fit to honour one of the specialists by promoting him to the chair, I do not think I am trespassing on your generosity unduly by bringing a highly technical subject under your notice, but I am well aware that the treatment of a matter of this kind must be limited before a general audience, and, therefore, I do not wish to intrude it too much upon your attention. The variations are great: take, for example, another field of visual acuteness taken by me for Dr. P. when he was a student in my class. The graph for his left eye is almost a circle, but its dimensions are very inferior to those of Mr. S. Thus, its horizontal breadth is about $\frac{3}{8}$ of an inch, and the vertical one is as nearly as possible of the same dimensions. Those who know Dr. P. know that he is an excellent observer, and I have no doubt as to the correctness of his observations, although, be it said, he gives the smallest field of anybody that I have hitherto examined. Almost all these observations were made at a distance of 2 feet, and if that were so in Dr. P.'s case, although I do not find it marked as such, it gives an extremely small angular opening, namely 53 minutes, 40 seconds.

Whether this field of visual acuteness is affected in disease I know not; it will well repay, however, the attention of some workers to investigate the matter further.

At the Ipswich meeting of the British Medical Association I took the liberty of pointing out that when one eye is injured, although there may not be sympathetic ophthalmia, the other eye very frequently has a contracted field, and to that state of affairs I have given the name of sympathetic degeneration. Further years of experience have only confirmed the observations which I made at that time. There is no doubt that in many cases of injury to one eye which are not followed by sympathetic ophthalmia there is marked contraction of the field of vision in the other. This was a discovery which I made in an attempt to foretell which cases of injury were likely to be dangerous from the point of view of sympathetic ophthalmia setting in later. It is generally admitted that the virus travels from one eye to the other along the optic nerves and chiasma, and very frequently the first symptom of an impending sympathetic ophthalmitis is the redness of the optic nerve in the sympathising eye. It occurred to me that the regular investigation of the fields of vision of eyes which from injury to the other were liable to sympathetic ophthalmitis might throw some light on this very obscure and harassing problem. In that I was disappointed.

I cannot say that there is anything in the field of vision which helps us to foretell an attack of sympathetic ophthalmitis apart from some change in the blind spot region, but I came on the rather astonishing fact that in many cases injury of one eye was followed by permanent contraction of the field of vision in the other.

Whether the field of visual acuteness undergoes any changes of a similar kind I am not able to say; one thing however is certain, so far as my observations have till now gone, and that is that the field of visual acuteness is not of a generally well defined order and extent as is the case for the field of vision, and therefore if it is only investigated after injury to one eye it is quite impossible to say what like it was prior to the injury.

This difference between visual acuteness and the form sense is of tremendous importance in view of recent legislation as to workmen's compensation. You cannot possibly express a man's working power in terms of visual acuteness. As already said, I have known a man at the bottom of a coal pit with only $\frac{1}{30}$ of visual acuteness earning as good wages as a man with full vision. It is quite true that if a person is to examine the texture of a piece of coal which he may be quarrying, in the same way as a geologist does, it is absolutely necessary for him to have some visual acuteness. A watchmaker must have visual acuteness, but the large bulk of manual labour does not require it at all, provided the form sense and sense of alignment are good. It is all but impossible meantime to say much about the form sense, for it has not yet been investigated. The conditions of labouring work are a function of the form sense and are not necessarily a function of the visual acuteness at all.

There is another matter to which I would like to refer before demitting office; it is that I consider the time is more than ripe to have a special registrable qualification for ophthalmic surgeons just as we have a special registrable qualification for dentists. This is a matter to which I called attention in the *British Medical Journal* of 27th April, 1901, and I see no reason now, with something like a dozen years of extra experience, to depart from the views which I indicated in that paper. We constantly hear of men who are called "eye specialists," and unquestionably the old regime has in this country produced many men in ophthalmic practice quite equal to those who have adorned other departments of the healing art. I have no wish to interfere in the least with the liberty of the medical profession. Let any man practise any department that he has a mind to. Any qualified medical practitioner can start practice at once as a dental surgeon, and so I would not for a moment prevent any qualified medical practitioner starting at once to practise ophthalmic surgery and medicine; but, as a matter of fact, at this moment although ophthalmic surgery was never so widely practised in the United Kingdom as it is just now, and, may I say, although I think a number of the modern practitioners are worthy of the heritage left to them in this country by such men as Bowman and M'Kenzie, yet technically speaking there is not such a thing as an eye specialist qualified by statute. In 1901 I argued for a special curriculum and a special degree or diploma, and I am strongly of opinion that such a diploma is more urgently required now than it was even then. It is true that the University of Oxford has an ophthalmic diploma, but I must say, with all possible respect to the premier British University, I think it is an extremely inadequate one, and if one of the books which has been issued for the instruction of graduates preparing for this examination is to be taken as indicating the standard which is required, then that standard seems to me deplorable. As indicated in the communication to which I have referred, I would very slightly curtail the present medical curriculum by leaving out such subjects as midwifery, medical jurisprudence, and materia medica, for a gentleman who is going to take a special license or degree in ophthalmology. I would have him study anatomy very fully, surgery and medicine to the same extent as does the ordinary medical man. He ought certainly to have a very wide training both in pathological and physiological laboratories, and should be for two years at least a student in a physical laboratory. Even from his very start I would have a slight difference in his education. He ought to have before he begins his professional study a thorough grounding in plane trigonometry and in the elements of the calculus. A good training in geometric and physical optics is essential, and no training in these two subjects can be effective and sufficient unless there is laboratory work and a competent knowledge of the elementary mathematics on which such a training must rest. I lay the greatest stress on a proper acquaintance with physics, for without that the would-be ophthalmic surgeon is not able even to read the higher text-books on which his work is founded.

I would also lay great stress on attendance at the pathological laboratory. The modern teaching is so different from the mere cutting of sections which, in my student days, was supposed to be pathological work. These are of some use undoubtedly to help in diagnosis, but I venture to think that for all the millions of sections that have been cut, ætiological pathology was at a complete standstill till the newer science of bacteriology and the cognate studies which may be embraced under the word immunity came into vogue. Thanks to biological pathology we can now approach a case without fear and trembling, for ever since the year 1891 we have known quite well that the prognosis of a cataract case, apart from such an unpreventable accident as intra-ocular hæmorrhage, is given by the bacteriological examination of the patient's conjunctiva. It was in 1891 that I first introduced into ophthalmic practice the careful testing of the conjunctival sac before the operation, and I am thankful to say that from that day to this I have not seen a single case of pan-ophthalmitis to follow a cataract operation.

But there is another factor which causes me to emphasise this need of a proper training in ophthalmology, and that is that the State is more and more making use of ophthalmic surgeons. They ought to be specially trained men just for the same reasons that gentlemen who hold public health appointments have to undergo a special education. No doubt for a public health appointment a great deal of the training which is undergone during undergraduate days is of great importance. Chemistry, physics, medicine, medical jurisprudence have all their bearing on the subject, but it is found necessary that certain laboratory and practical courses should be taken by a man who aspires to look after the health of the community. So also an adequate training in pathology, physics, and physiology is necessary for the man who is to be entrusted in any public capacity as an ophthalmic specialist. So strongly am I of this opinion that I entirely favour the introduction of diplomas and degrees in ophthalmology provided they are made of real value and mean thorough scientific knowledge. At present it is possible for any man to attend an ophthalmic clinic say for a period of from three to six months and to give out that he is an ophthalmic surgeon.

A spectacle vendor errs, and errs seriously, when he thinks that a knowledge of geometric and physical optics will make him competent to practise ophthalmology; so a medical man errs, and errs greatly, when he imagines that he can practise ophthalmology without a thorough-going knowledge of ordinary geometric and physical optics and without a thorough training in modern pathology. Without the former he will not be able to read the standard text-books, such as that of Helmholtz; without the latter his practice will be nothing but the dreary observance of rule of thumb.

Cuignet, of Lille, towards the end of the seventies or beginning of the eighties of last century, introduced into ophthalmic practice the method now known as the shadow test. Before that time it is true that Bowman in this country and Sichel, in Paris, had used reflections of the same kind as of service in diagnosing conical cornea. They certainly, however, never employed the method for determining errors of refraction, and Cuignet is entitled entirely to the merit of that discovery. So far as I am aware the first important paper published upon it in this country was one by Charnley, of Shrewsbury, in 1882, and I think it was there that I first became acquainted with the invention. Probably one of the best discussions on the method that has ever been written is that of Dr. Jackson, of Denver. It was either myself or my friend, Dr. J. C. Renton, who first used it in Glasgow, and I think it all the more interesting to mention that fact because it is a method which at present I seldom employ.

For the most part I still prefer the direct measurements made by lenses behind the ophthalmoscope. Let us just for a moment consider the true limitations of retinoscopy, as it is sometimes called. To begin with, the patient is often asked to look at a mirror, which may be at 1 metre or 1½ metre from him; that instinctively calls in the power of accommodation and consequently makes the reading entirely erroneous; but if this be avoided by causing the patient to look at the other side of the room, then it is perfectly clear that the surgeon must place himself outside of the patient's direction of vision, and consequently that the refraction which he takes from the eye is not that of the refractive media in the axis of vision but is that of some other secondary axis. This of course would be all right were the media bounded by a spherical surface or even by one which is approximately spherical, but the cornea is not, and any one who knows anything of corneal measurements, to say nothing of retinoscopic practice, must know that even at so small an aperture as five or ten degrees from the visual axis the refraction of the eye is quite different from what it is at the visual axis itself. When I see any one sit down to examine a patient by retinoscopy, and I hear him request the patient to look at an object at the other side of the room, I know quite well that that examiner has never studied the physics of ophthalmology. To get a good result with the shadow test the following conditions are necessary:—In the first place, the patient, if under 40 years of age, should be thoroughly under a mydriatic. If he be a young child atropine ought to be used for a day or two previously. Secondly, the patient's fixation while undergoing examination should be directly at the centre of the mirror which the surgeon is holding; in other words, the surgeon's visual axis and the patient's should as nearly as possible coincide. And thirdly, the rotary excursions of the mirror should be very limited in extent. If these precautions are not taken the results must be erroneous, but if proper care is observed then undoubtedly the method is a good one, and especially suitable in my opinion for young children provided they are thoroughly atropinised. But yet in some respects the introduction of a method of examination which can be used tolerably well by a person who has never had a thorough education in the higher branches of physiological optics is not without its drawbacks.

There is, I suppose, no great good without some accompanying evil. Lister's discovery is, I venture to think, the most important thing that has ever taken place in the history of medicine, but it sometimes seems to have made operating dangerously easy. An easy method, such as retinoscopy, has similarly led a few practitioners, I fear, to disregard the strict limits of accuracy. It is a longer method and one which requires a greater expenditure of time than direct measurements, and yet we hear of batches of children having their eyes tested by the shadow test, under the auspices of school boards, at the rate of something like 150 children to the hour, which works out at an average of 12 seconds per eye. No doubt that will meet "the requirements of the department." As long as the department gets a report everything is well, altogether *ex adverso* of what the report contains. Not long ago one of His Majesty's inspectors visited a school, and amongst other things looked into a French class. By and by there was the usual report that matters had much improved in that particular class, that the pronunciation was better, and so on, in the usual style. The number of pupils in the class was 20, and the time that the gentleman took in their examination was, as near as may be by the watch of one of the pupils, 10 minutes.

In optics, as in everything else, there is no contrivance which will enable men to do the impossible, and it will take at least a considerable period by any method to know whether a child really requires examination or not. I myself would say that at least a period of something like four to five minutes per eye would be required before an examiner could definitely say whether a particular child required investigation or not. In the event of its requiring it, an examination will not be of much value which does not take up a period of from twenty minutes to half an hour per eye. It is a mere farce, if not worse, to say that 150 to 200 children can have their eyes examined within an hour. It may be another ingenious method which the department has invented to throw money into the maelstroem, but that is all. In this connection I must say, as an hospital surgeon, that there is a tendency to have a great deal of unnecessary operating. I do not refer particularly to very gross cases such as one that was recently brought under my notice. A child at one of the twelve seconds examinations was found to have congenital cataract, and was forthwith advised by the discoverer to have the thing operated on. Fortunately the parents of that child for once exercised parental control and took the bairn to their own medical man, who happened to have an excellent knowledge of such matters. On examination he found that the child on whom it was proposed to do an operation had not less than $\frac{6}{6}$ of Snellen; in other words, had a kindly providence not interfered that child would have been mutilated for life. It would have lost once and for all the advantages of accommodation and would have been reduced to a sorry plight. But the thing to which I chiefly object is the continual craze to operate on children who squint. The matter is one of extreme importance, and therefore I make no apologies for again enunciating views which I have often expressed during the last twenty years. An operation for squint may readily be done for one of two purposes or for them both. In the first place, nature has endowed us with two eyes in order that we may have the intuitive perception of the third dimension of space, or in other words, binocular vision. It is impossible with a squinting eye to have that. In the second place, it is quite justifiable to put a squint straight in order to improve the personal appearance.

Let us take up the first point. If a person is to have binocular vision, amongst other things it involves that he shall originally have good vision in both eyes. Now, in the large majority of squinting children this is not the case. Probably in from 70 to 80 per cent of them there is amblyopia, or very defective sight in the squinting eye. That is a state of affairs pointed out by Donders, and confirmed by everybody since his time. The views which have been expressed as to the origin of this amblyopia have been very numerous, and have given rise to a great deal of controversy, but the following facts seem fairly well established. To begin with, if the squint has not set in till the child is 4 or 5 years of age, this blindness or amblyopia is not present. Further, in cases of squint where it is alternating, sometimes the one eye and sometimes the other being used for vision, this amblyopia is not present; but if a young child of, say, 2, or perhaps even 3, years of age takes a squint in one eye, and squints constantly and continuously with that eye, never using it for vision, then the function of vision is never developed, and the eye is permanently defective. Unless visual acuteness is possible at that period of life at which the functions of the brain are being developed, then at no subsequent time can the function come into existence. A precisely similar state of affairs is found in congenital cataract. If the cataract is so extensive and so severe in early life that it prevents the function of visual acuteness being developed, then you may operate as you like; you will never by operation succeed in procuring visual acuteness. In eyes in which the lenses have been affected throughout their entire extent with congenital cataract you will probably get the form sense, for that depends upon the light sense. There is no case on record in which a person arrived at adolescence, with congenital cataract present to such an extent as to prevent him reading and writing, ever by operation gained the power of reading and writing. I have on various occasions mentioned two such cases that I personally have recorded. One was a student of brilliant parts. He had been allowed to grow up to the age of ten or twelve with congenital cataract present to such an extent as to prevent visual acuteness. He was operated on and the lenses entirely removed, and the eyes found to be healthy. Thereafter he went to Edinburgh, and in the classes of the University was a most brilliant student. At the time of his death from glycosuria he was studying for his M.A. degree, with honours in Philosophy, and yet it was found impossible both here and in Edinburgh to teach a lad of such mental calibre as that either to read or to write. There is not a single case on record where visual acuteness has not been developed in the first two, or perhaps three, years of life in which subsequently it has been got by operative procedure.

Now, a squinting eye which has amblyopia can very easily be put straight, and there is scarcely a week in which I am at the hospital without having one or more children sent by school medical officers to have their eyes operated on for strabismus. I say that in about 70 or 80 per cent of cases it is not justifiable. I mean that in all those patients where there is amblyopia from want of functional development a squint operation ought not to be undertaken during the early years of childhood. If it is perfectly clear that the eye is defective, then you cannot hope to restore vision to that eye by a strabismus operation, however successful. All you can do is to effect the second purpose of such operative work, namely, to improve the child's appearance. That is a matter which can very easily and well be left over till the youngster reaches adolescence; and, moreover, when parents are told to take their children to have an operation at an Eye Hospital, they certainly ought to be warned by the school medical officer that it will not improve the vision of the eye in the least, but that all it will do is to improve the child's appearance. I must have seen many dozens of such patients, but I have never yet come across one that has been warned. The parents are simply told to take the child to an Eye Hospital and to get the eye put right, and nowadays they are liable to prosecution if they do not comply with this demand. They are not informed that, so far as the function of vision is concerned, any operative procedure is not of the slightest use, unless indeed it be one of the somewhat infrequent cases already referred to where there is good visual acuteness in each eye. But there is another consideration: it is this—after the age of 12 or 13 the squint operation of advancement can very easily be done in most cases under a local anæsthetic. Before that time of life a general anæsthetic must all but invariably be administered. The risk is no doubt small, but nobody will deny that there is a risk, and that it would be a lamentable circumstance to have a death from an anæsthetic where the operation has not in view functional benefit to the child, but merely the improvement of the general appearance. The same operation can quite easily and painlessly be performed with a local anæsthetic in most cases when the patient is a few years older. Now, the ethical question is simply this—Have you any right to subject a young patient to an operation which will not improve his function of vision, and which is accompanied by a substantial risk, simply and solely at the dictates of "The Department," and without fully informing and getting the co-operation of the young patient's guardians? I personally have answered that question in the negative, and I refuse to do it: but at the same time it would be absolutely malpraxis to refuse operation to a child when both eyes have good vision, and when the amblyopia has not made operative procedure futile. These cases, after suitable treatment, should be operated on as early as possible.

Perhaps the foregoing may appear somewhat dogmatic. I have no wish to misjudge anything. It seems to me that there has been an attempt to do the impossible, and we need not be at all astonished if an attempt of this kind has been a failure. We do not blame practitioners so much as the authorities, who think that accuracy and thoroughness can be obtained with inadequate resources. It is just the same thing perhaps in primary education. The attempt to teach children everything for the most part has succeeded in teaching them nothing. We do not for a moment question the excellent intentions of the authorities, but we venture to think, with all respect and good feeling, that they have bitten off much more than they are able to chew. I feel that I have some right to take an interest in this subject, for in

1883 I wrote a letter to a member of the Glasgow School Board, urging that the eyes of school children should be examined. I got back a reply to say that there was no need for anything of the kind. I rejoice extremely to know that something is now being done; and surely if I err it is to virtue's side in insisting that there shall be accuracy and conscientious work, at any rate in this part of our educational equipment.

Let me, in conclusion, say that I have thoroughly enjoyed my term of office, and I hope that to some extent I have discharged the duties of the Chair to the satisfaction of the members of the Society.

CONGENITAL OCCLUSIONS OF THE ŒSOPHAGUS AND LESSER BOWEL.[1]

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Introductory.

The following series of specimens illustrates some of the congenital malformations of the œsophagus and lesser bowel.

I have arranged them in three classes, according as they affect—*A.* Œsophagus: *B.* Duodenum; and *C.* Ileum.

Following the description of the specimen or specimens in each of these classes there is a review of the principal literature on the subject. This is succeeded by remarks on the specimen or specimens under consideration. Each section is followed by a list of bibliographical references.

Summaries of the cases from which the specimens were obtained are given in an Appendix. In these summaries each malformation described in the paper is italicised, and the reference page given.

A. Œsophagus.

Malformation of the tracheo-œsophageal septum.

Two specimens of this malformation occur in my series of cases (Cases I and VIII).

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[1] Thesis presented, with additional papers, to the University of Glasgow for the degree of D.Sc.

1. (Case I).—There was complete atresia of the œsophagus. The upper segment, continuous with the pharynx, terminated below in a blind pouch, the lower end of which reached to the level of the seventh ring of the trachea. The lower segment of the œsophagus on being traced upwards from its cardiac end became markedly contracted as it neared the level of the bifurcation of the trachea. Almost immediately above this level (nineteenth ring) it joined the trachea, its posterior wall forming the posterior wall of that tube, and continuing upwards as a muscular layer ventral to the ventral wall of the blind upper segment. There was no appearance of any band joining the segments of the œsophagus, but some thin fascia stretched continuously over both.

The appearance of the parts is shown in Fig. 1, which represents the trachea and upper segment of the œsophagus split antero-posteriorly in the median line and laid open.

2. (Case VIII). — There was complete atresia of the œsophagus. The pharynx terminated in the blind pouched upper segment (Fig. 2), which extended down to the level of the twelfth ring of the trachea, 1·5 cm. below the cricoid cartilage. The upper segment appeared dilated—measuring 9 mm. across—as compared with the lower segment, which was only 4 mm. across. On tracing it up from the stomach, the lower segment of the œsophagus was found to join the trachea at the level of the nineteenth cartilaginous ring. Above this level there was a common tracheo-œsophageal tube, the posterior wall of which was continuous with the original posterior wall of the lower segment of the œsophagus. There were no communicating bundles passing up from it to the blind end of the upper segment.

Histology.—Antero-posterior longitudinal sections showed that the wall of the *upper segment* was substantial, consisting of outer longitudinal and inner circular muscle-bundles, and a well-marked layer of fibrous tissue, and was lined by stratified squamous epithelium. The longitudinal fibres showed *striation;* the circular fibres having been cut transversely, striation was not seen in them. The *posterior wall of the tracheo-œsophageal tube* was well supplied with muscle-fibres; for the most part these were smooth, but some striated fibres were met with here and there. Mucous glands were numerous, some of them lying external to the muscle-fibres. The wall was only about half the thickness of that of the upper segment. In the portion of tracheal wall in contact with the ventral wall of the pouch there were a few scattered muscle-bundles. Below this level the arrangement of the muscle-fibres corresponded pretty closely with that of the blind upper segment, viz., external longitudinal and internal circular. As the lower part of the section was approached, however, there were, in addition, longitudinal bundles present between the circular muscle and the mucous membrane. These bundles varied in thickness and could not be looked upon as normal muscularis mucosæ. At the junction of the *ventral wall of the lower segment* of the œsophagus with the trachea there was a short septum, the upper edge of which was thin, and on a level with the nineteenth cartilaginous ring.

The *septum* was a combination of trachea and œsophagus. It contained cartilage, on the anterior surface of which was tracheal mucous membrane and submucosa. Posterior to the cartilage were numerous transverse sections of muscle-bundles. These were found as high as the free edge of the septum. Between them and the œsophageal mucous membrane were longitudinal bundles of muscle-tissue of no great bulk. In the region of the free edge were numerous mucous glands between the circular muscle-bundles (œsophageal) and the tracheal surface of the septum.

Epithelium of lower segment of the œsophagus.—The posterior wall was lined by columnar ciliated epithelium, which, a little below the level of the free edge of the septum, gave place to stratified squamous non-ciliated cells. The ventral wall of the œsophagus, where it formed the œsophageal surface of the septum, was covered by columnar ciliated epithelium.

REMARKS.

On comparing these two specimens they are found to agree in several points—

1. The upper segment of the œsophagus ends as a blind sac which projects downwards beyond the level of the larynx.
2. There is a free communication between the lower segment and the trachea close above the bifurcation of the latter.
3. The absence of connecting bands between the upper and lower segments.
4. The fœtuses from which they were obtained present other malformations (see case-summaries in Appendix).

The specimens differ from one another in the position of the tracheo-œsophageal fistula, and in the nature of their associated malformations. Thus, in Case I the lower segment traced up from below is found to become incorporated with the trachea at or just above its bifurcation. In Case VIII there is a short septum between the two tubes, which septum extends upwards to the level of the nineteenth tracheal ring. As regards associated malformations, Case I was the subject of transposition of the thoracic and abdominal viscera, septal occlusion of the duodenum, and atresia ani. In Case VIII there was malformation of the recto-vesical region—atresia recti, stenosis of urethra, abnormality of left vas deferens, and microscopic communication between the rectum and the bladder.

On referring to the *literature*, it is therein stated that congenital malformations of the œsophagus are not very frequent. A considerable number of examples have, however, been published since 1838, at which time Schöller (cited by Giffhorn, *vide infra*) found only one case reported. Schöller framed a classification of œsophageal anomalies, and subsequent writers have done the same; but observation has shown that the form which occurs in a great preponderance of these cases is that in which there is complete interruption of the œsophagus, the upper segment ending blindly and the lower communicating with the trachea.

Mackenzie[1] writes:—"Deficiency of a part of the œsophagus, generally affecting the middle third, together with an abnormal communication between the gullet and the trachea or one of the bronchi, is the most common deformity, and though met with in monsters and stillborn children, is most frequent in infants who are born alive, but survive only a few days." The opening of the lower segment as viewed from the trachea is generally a small aperture, sometimes oval, round, or crescentic with its concavity downwards. "The two separate portions are generally connected by a small band of muscular or tendinous fibres" (p. 223). Other deformities frequently co-exist.

Mackenzie gives a long list of references. He believes that by far the larger number of malformations of the œsophagus are due either to disease or to a "displacement of formative material at a very early period of embryonic life . . . some slight morbid deflection of the normal."

Shattock[2] reported in 1890 a case to the Pathological Society, and referred to four cases in the Museum of the

Royal College of Surgeons, and to three cases reported in the *Centralblatt für Laryngologie.*

Ballantyne[3] describes as the common form "termination of the œsophagus in a *cul-de-sac*, the lower rudiment of the canal communicating with the trachea or bronchi." From the lower part of the œsophagus a "small opening establishes a communication with the trachea" (*loc. cit.*, p. 463). Associated malformations are uncommon. He gives a number of references to the literature, and an interesting explanation of the fact that meconium is sometimes passed in these cases, possibly from the fœtus in utero swallowing liquor amnii.

Keith,[4] in 1906, reported three cases, and referred to a fourth. His communication was entitled, "Malformation of the Tracheo-Œsophageal Septum," and he recorded the cases, "not . . . because of their rarity . . . but because, in the first place, the nature of these malformations is not generally understood by those who describe them in the medical press; secondly, because in all three cases there was present a right aortic arch or its representative;" and, thirdly, because recorded cases in literature are usually unaccompanied by explanatory illustrations.

He explains (*loc. cit.*, p. 54) the malformations as evidently formed by the "lateral tracheo-œsophageal ridges and folds proceeding obliquely backwards [? downwards] and dorsalwards, so as to meet on the dorsal wall of the foregut." If, however, there is a partition between the lower segment of the œsophagus and the trachea—the common form of the malformation the tracheo-œsophageal septum must have been formed in two parts. The posterior (lower) part forms the partition; the anterior (upper) part, obliquely placed, forms the occluding agent, *i.e.*, the floor of the blind end of the upper segment. If the œsophagus continues back from the occlusion, undivided from the trachea, then the *whole* of the tracheo-œsophageal septum has been obliquely placed.

Gifflhorn[5] published in 1908 an account of two cases, in both of which the lower segment of the œsophagus communicated with the trachea by a slit-like opening, and fibrous bands connected the upper and lower segments. He found that in the literature of the subject the majority of cases resembled his two, and he mentions, amongst others, the frequent co-existence of other malformations (especially atresia ani) and pneumonic patches in the lungs, and redness of the mucous membrane of the trachea and œsophagus. As a variation of the above, he found that sometimes the lower segment of the œsophagus communicated with the trachea by a *wide* opening, so that the two tubes, alimentary and respiratory, formed a common passage (*zusammenhängende Kanal*).

He enters at some length into the question of the etiology of the malformation. He finds the explanation of the fistula in the incomplete union of the lips of the tracheal outgrowth from the foregut. The atresia of the œsophagus is, however, more difficult to account for. He quotes Förster's theory that the atresia depends on "einem Stehenbleiben des Ösophagus auf der Stufe der Entwicklung, in welcher er noch solid war"—hollowing of the solid tube has taken place above and below, but not in the middle portion. While he considers that Förster's theory has something to recommend it, he advances his own opinion that there is an adhesion (*Verklebung*) between the upper portion of the lips of the tracheal outgrowth and the posterior wall of the foregut which is squeezed in between these lips. This explanation is akin to that of Shattock (*loc. cit.*, p. 93), viz., that the outgrowth of the diverticulum from the anterior wall of the foregut drags forwards and kinks the posterior wall. Shattock finds support for this view in the narrowing of the œsophagus which normally occurs in this situation. At the same time, Giffhorn (*loc. cit.*, p. 125) thinks that the type of case where the tracheo-œsophageal opening is wide is to be explained by Mackenzie's theory of an abnormal situation (*Verlagerung*) of the lips of the tracheal opening, or as Keith (*vide supra*) puts it, the tracheo-œsophageal septum has been placed obliquely.

Schneider,[6] in a recent work, thinks it probable that in this displacement of the lips of the orifice of the tracheal diverticulum a defect of formative material plays a part. He bases this opinion on the case reported in 1845 by Levy in which the lower segment of the œsophagus arose from the root of the right bronchus, and in which there was defective development of the right lung.

Forssner[7] considers that the primary cause of the malformation is disturbance in the separation of the trachea from the œsophagus. He thinks that the alterations in the capacity (*Raumverhältnisse*) of the œsophagus, depending on the persistence of the fistula, are a predisposing factor in the origin of an epithelial occlusion of that tube, which occlusion, again, may be the reason for the frequent co-existence of atresia of the œsophagus with œsophago-tracheal fistula.

Lewis[8] draws attention to an appearance in the model (which he figures) of Bremer's embryo. This is an oblique sulcus on the outer aspect of the lateral wall of the œsophagus, with corresponding elevation of the epithelial surface. It "seems correlated with the shape of the adjacent body-cavity:" but "apparently" it "has not previously been described," and Lewis refers to its potentially *etiological* relationship to œsophageal atresia. It is worthy of mention that in the model there is, in addition to the lateral œsophageal groove just mentioned, a notch between the lung-bud and the œsophagus, and, further, a certain degree of approximation of the lateral walls of the foregut immediately above the notch to form the tracheo-œsophageal septum.

From a consideration of the specimens described above, and of the literature of the subject, it seems highly probable that the malformation is due to an abnormal relationship of the tracheo-œsophageal ridges to the posterior wall of the œsophagus.

These ridges, which in normal circumstances separate the trachea from the œsophagus—the "Trennungsleisten" of Giffhorn (*loc. cit.*, p. 125)—and so form the tracheo-œsophageal septum, are probably placed obliquely so that their hinder ends come in contact in the posterior wall of the œsophagus. This malposition of the ridges would account for the absence of separation of the trachea from the œsophagus lower down, as in Levy's case (*vide supra*, p. 21).

It is not common to meet with this high degree of malformation. More frequently there is a partition forming the lower margin of the tracheo-œsophageal communication, which, as we have seen, Keith explains as due to the tracheo-œsophageal ridges having been formed in two parts. This explanation of Keith's is, I think, supported by the appearances in Bremer's embryo. In this embryo it will be remembered that there was, in addition to the notch between the lung-bud and the œsophagus (and, also, the beginning of a septum), an oblique infolding of the lateral and postero-lateral wall of the œsophagus.

Whether we have to deal with ridges (in part or wholly obliquely placed) approaching the hinder wall of the gut, or with a dragging forwards of the gut-wall to meet the upper part of normally-placed ridges, contact is brought about. The contact becomes permanent, and occlusion results. The ridges in contact with the posterior wall of the gut unite with one another in normal fashion to form the posterior wall of the larynx.

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[1] Mackenzie, *Diseases of the Throat and Nose*, 1884, vol. ii, p. 216.

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[3] Ballantyne, *Antenatal Pathology and Hygiene—The Embryo*, 1904, p. 462.

[4] Keith, *Journal of Anatomy and Physiology*, 1906, vol. xli, pp. 52-55.

[5] Giffhorn, *Virchow's Archiv*, Bd. 192, 1908, S. 112.

[6] Schneider, in Schwalbe's *Morphologie der Missbildungen des Menschen und der Tiere*, III Teil, VIII Lieferung, 2 Abteilung, 8 Kapitel, 1912, S. 777.

[7] Forssner, *Anatomische Hefte*, 1907, Band 34, Heft 102, S. 1-163.

[8] Lewis, in Keibel and Mall's *Manual of Embryology*, 1912, vol. ii, p. 313.

B. DUODENUM.

Occlusion of lumen by septa.

This specimen, the only one of its kind in my series, is from Case I. The case occurred in the practice of Dr. David Glen, of Glasgow, and I was enabled by his kindness to examine the body after death. Birth was premature (six and a half months), and the patient survived only one day. Besides atresia ani, there was no other external malformation.

On opening the body, which was that of a male infant, it became evident that it was the subject of *transposition of the viscera.*

Abdominal viscera.—The umbilical vein passed into the liver, 1·5 c.m. above its lower margin, and at the upper end of a vertical groove. The appendix and cæcum occupied their usual position in the right iliac fossa; but, on following up the ascending colon, it was found to pass backwards under the right lobe of the liver and to enter the descending colon, which coursed down to the right of the mesentery, and behind the ileo-cæcal junction, to end in the rectum. The rectum ended as a blind pouch close to the perineum. On turning up the liver the *stomach* was found coming from behind the posterior edge of the right lobe, above the right kidney, and coursing forwards for nearly 3 c.m. to end at the right extremity of a bulky *duodenum*, distended with greenish material and overhung by the left lobe of the liver (Fig. 3). At its cardiac end the *stomach* measured nearly 1 cm. vertically; but before reaching the duodenum it narrowed to half of this measurement. The stomach, and still more the distended duodenum, contrasted with the *small intestine*, which was about 6 mm. in diameter; the colon was 7·8 mm. From the left (distal) extremity of the cyst-like duodenum the small intestine passed, its coils lying over the front of the left kidney. The line of attachment of the *mesentery* extended from the front of the upper pole of the left kidney, along the lower margin of the distended duodenum, and as far as its right extremity, whence it ran down to the ileo-cæcal junction, springing from the right of the vertebral column, and continuous with the mesocolon.

On removing the liver, the *gall-bladder* was found embedded in the under part of the left lobe, and passing towards the right extremity of the distended duodenum. After removal of the liver, the cardia of the stomach was seen under the right side of the dome of the diaphragm. The distended duodenum had a maximum diameter of about 2·5 cm., and compression failed to drive its contents back into the stomach or forwards into the distal bowel. The *spleen* was in its normal relationship to the cardiac end of the stomach, and measured 1·5 cm. in length.

On cutting open the *duodenum* it was seen that the distended portion was shut off from the remainder of the bowel by two *septa*. The proximal of these was situated just above (*i.e.*, on the pyloric side of) the gall-bladder; and from the fact that the contents of the distended portion were inky in colour and that its mucous membrane was stained almost black, while that of the bowel between the septum and the pylorus was of a pale green colour, it was presumed that the septum was higher up in the bowel than the entrance of the bile-duct.

Histology.—The *distal portion of the cyst-like duodenum*, with the adjoining undistended bowel, was removed *en bloc* and hardened. On trimming the specimen previous to embedding in paraffin, it was observed that at the seat of its junction with the undistended bowel the wall of the cyst was thickened over an area much greater than the diameter of the latter.

An interrupted series of vertical longitudinal sections was made, which showed the occlusion between the two portions of gut to be formed of their respective mucosæ placed back to back, and separated from one another by a scanty layer of submucosa. There was no appearance of any inflammatory process. The muscular tunics of the bowel passed uninterruptedly from the dilated to the contracted portion. The proximal end of the latter was spread out on the former in both antero-posterior and vertical directions,

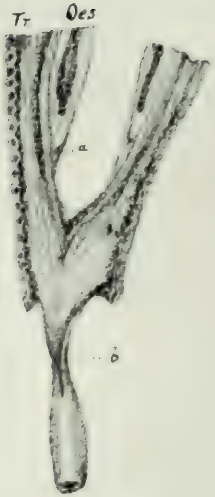

Fig. 1.

Imperforate œsophagus (Case I). Parts split antero-posteriorly and laid open. *Tr*, trachea; *Œs*, œsophagus; *a*, fascia stretching between upper and lower segments of œsophagus; *b*, contracted portion of œsophagus below where it joins with trachea (p. 17).

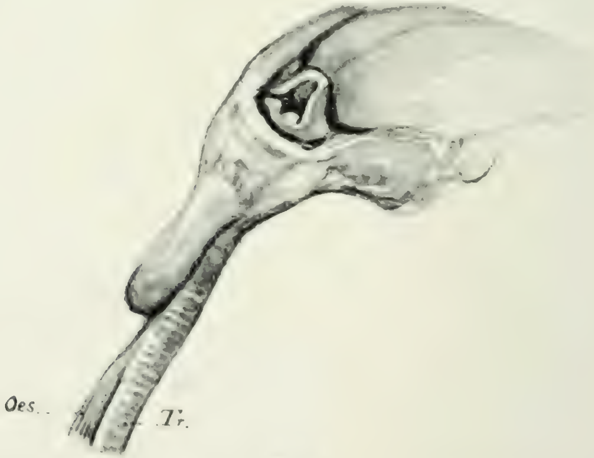

Fig. 2.

Imperforate œsophagus (Case VIII). External view of parts, showing pouched upper segment of œsophagus overhanging posterior wall of tracheo-œsophageal tube (p. 17).

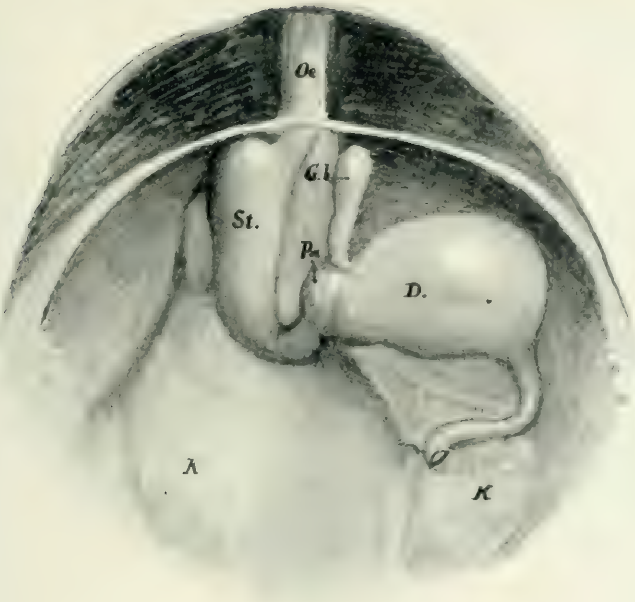

FIG. 3.

Transposition of viscera; and duodenal septa (Case I). *D*, duodenum distended with meconium; *pa*, pancreas; *Gb*, gall-bladder; *St*, stomach; *K*, *K*. kidneys; *Œs*, œsophagus (p. 23).

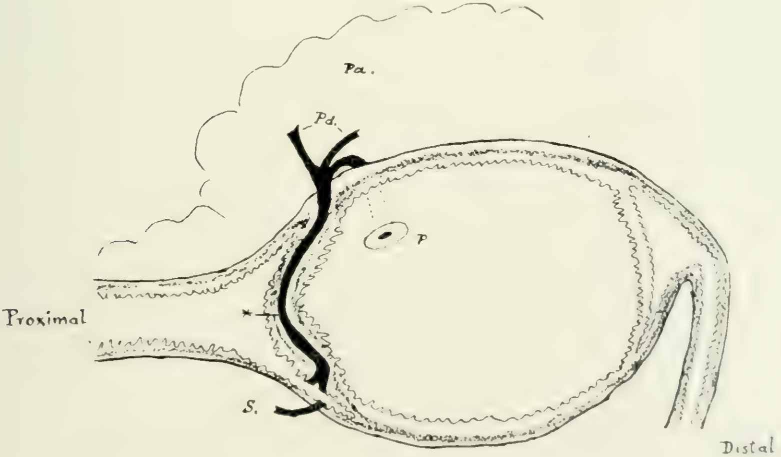

FIG. 4.

Diagrammatic reconstruction of duodenal septa (Case I). *Pa*, pancreas; *Pd*, pancreatic ducts; *P*, papilla opening into cystic bowel; *S*, duct of Santorini; *, canal tunnelling proximal septum; *wavy line*, mucous membrane; *shaded*, muscularis of bowel (p. 25).

giving rise to the thickening of the wall of the cyst mentioned above. The epithelium of the mucous membrane generally was not well preserved, and was best seen in the spread-out proximal end of the contracted gut.

A series of longitudinal sections of the *proximal* (*pyloric*) *end of the cyst* was made. These showed that the septum between the cavity of the cyst and the lumen of the bowel on the pyloric side of the cyst differed in structure from the distal septum. It showed two layers of mucous membrane, each with its submucosa. Between the two submucous layers was a layer of muscularis, derived from and continuous with the deeper layers of the intestinal muscularis. The septum was not solid, but was traversed by a channel, lined by columnar epithelium, with here and there a clear, or "goblet," cell. This channel was continuous below with the lumen of the proximal bowel: above, it was continuous with ducts *in* the pancreatic tissue. These, again, presumably after union with the bile-duct,* communicated with the cavity of the cyst by a single large opening. At the seat of communication between the septal channel and the pyloric part of the duodenum another pancreatic duct (? duct of Santorini) coursed down the anterior wall of the cyst, and opened into the pyloric part of the duodenum. (A reconstruction of the sections is shown in the diagram, Fig. 4).

The epithelium lining the ducts was pure columnar; but, as the opening of the ducts into the lumen of the gut was approached, goblet cells were superadded in increasing numbers.

LITERATURE.

It is impossible to ascertain from literature the *actual frequency* of congenital malformation of the intestine. There must be many cases which are not recognised, or in which, even if recognised, no opportunity is given for detailed examination of the lesion. Besides, allowance must be made for cases where the lesion may have been examined, but the result not published.

Excluding for the present any consideration of the malformations of the rectum and anus, I shall for convenience divide intestinal malformations into three classes, according as they occur in (1) the duodenum: (2) the jejuno-ileum; and (3) the colon.

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* The bile-duct was not found as a separate structure, probably owing to incompleteness of the series of sections.

I wish first to consider the *comparative frequency* of malformation affecting the *duodenum*, taking up afterwards the nature and seat of the malformation, abnormality of ducts, and, lastly, the etiology of the condition.

(*a*) *Comparative frequency.*

The literature of the subject is rather confusing. Thus Johnson[1] writes that next in frequency to the rectum and anus comes "the site of the omphalo-mesenteric duct in the ileum. Atresia or stenosis of the duodenum has been observed in a fairly large number of cases. The seat of the closure or stenosis has been in most cases above the papilla. . . . Congenital stenoses of the large intestine are, except at its lower end, rare."

Murphy[2] states that congenital occlusion of the small intestine is "most frequent in the duodenum; the next most common site is the ileo-cæcal region."

Ballantyne[3] does not definitely state the frequency, but remarks that "obstruction of the duodenum has been noted. . . . The ileum is apparently a common seat of intestinal obliteration."

If we go back a little into German literature, however, we find more definite statements. Thus Silbermann[4] tabulated 57 cases of congenital occlusion of the small bowel. The frequency was as follows:—

Duodenum, . . .	24 cases	(42·1 per cent).
Jejuno-ileum, . . .	31 ,,	(54·38 ,,).
Jejuno-ileum and colon, .	2 ,,	(3·5 ,,).

Gärtner[5] gives particulars of 65 cases of congenital atresia and stenosis of gut. In the seventh group ("Fälle von rein casuistischem Interesse") there are 38 cases. Analysis of these shows the following incidence:—

Duodenum, . . .	16 cases	(42·1 per cent).
Jejuno-ileum, . . .	18 ,,	(47·36 ,,).
Colon, ...	4 ,,	(10·55 ,,).

Schlegel,[6] in 1891, reported as follows:—

Duodenum, . . .	29 cases	(32·5 per cent).
Jejuno-ileum, . . .	54 ,,	(60·6 ,,).
Colon, ...	6 ,,	(6·6 ,,).

These figures, if added together, give as the average percentage of frequency:—

Duodenum,	38·9	per cent.
Jejuno-ileum,	54·11	„
Colon,	6·88	„

Forssner,[7] as the result of his investigations, gives the following numbers (p. 89):—

Duodenum,	79 cases	(35·9 per cent).
Jejuno-ileum,	103 „	(46·8 „).
At Bauhin's valve,	16 „	(7·27 „).
Colon,	22 „	(10·0 „).

It will be seen, on comparing Forssner's percentages with the combined percentages of Silbermann, Gärtner, and Schlegel, that there is not a great discrepancy so far as the duodenum is concerned. The discrepancy in the case of the jejuno-ileum is probably to be explained by the inclusion, in the former figures, of malformations at Bauhin's valve with those of the jejuno-ileum. If we add Forssner's percentage for valve-malformations (7·27) to that for jejuno-ileum (46·8) we get 54·07 as compared with 54·11 of combined figures. If we combine the percentages of Forssner's cases with those of the previous table we get:—

Duodenum,	37·4	per cent.
Jejuno-ileum,	54·09	„
Colon,	8·44	„

These figures show that malformations of the jejuno-ileum are actually the most frequent. Those of the duodenum come next, and, lastly, and a long way behind, come those of the colon. But, as Tandler (Forssner, *loc. cit.*, p. 131) pointed out, the *relative frequency*, or frequency per centimetre of gut-length, is quite another matter. From this point of view the *duodenum* is very much *the most frequent seat of malformation*. Forssner (*loc. cit.*, footnote, p. 135) quotes Dreike's figures for the length of the different parts of the bowel: duodenum, 12 cm.: jejuno-ileum, 253 cm.; and colon, 58 cm. Malformation occurs in the following proportion:—

Duodenum,	6·6	per centimetre.
Jejuno-ileum,	0·4	„
Colon,	0·38	„

I do not consider that this point is of importance; but I mention it because it is apt to lead to misunderstanding, unless the difference between comparative frequency and frequency per centimetre is kept in mind.

(*b*) *Nature of malformation.*

In considering this point I shall refer only to Forssner's figures. He was able to find reported 220 cases in all: but in only 134 of these was the anatomical form of the malformation described. He divides the cases into three classes, according to nature of the malformation.

In *Class I* the malformation takes the form of a *membrane stretched across the lumen of the gut.* The membrane may be complete, causing an *atresia*, or incomplete (iris-like), in which case a *stenosis* is produced. Of 49 cases of congenital obstruction due to a membrane, 34 were atresia and 15 stenosis. Of the 49 cases, in 17 the duodenum was the part affected: atresia occurred in 9, and stenosis in 8. In Forssner's own cases the membrane was composed of two epithelial coats, with a layer of submucosa between them. But in some cases mucous membrane alone has been found, whilst in others a layer of muscularis in addition has been noted.

In *Class II* there is an actual interruption of the gut, and there are formed *two blind ends connected by a cord of varying thickness and length.* Of this variety there were 40 cases—35 atresias and 5 stenoses. In the atresias the cord was solid: in the stenoses it was tunnelled, having a small canal-shaped lumen. These 5 cases of stenosis all occurred in the duodenum. In addition, this part of the gut was in 11 cases the seat of atresia.

In *Class III* the interruption of the continuity of the gut is complete, and the *blind ends are free.* Of this variety, in 13 out of 45 cases the duodenum was affected. As a rule, in the duodenum the blind ends are in apposition, although no tissue connects them.

To summarise: in the *duodenum* the obstruction takes the form of—

Membrane—		
Complete,	9	17 (36·9 per cent).
Incomplete,	8	
Interruption, with blind ends—		
Atresia,	11	16 (34·77 „).
Stenosis,	5	
Free blind ends,		13 (28·26 „).
		46

According to these figures, there is not a great difference in the frequencies of Classes I and II. The variety showing free blind ends is less common than either of the others. The figures show further that atresia is more common than stenosis. This fact is more strikingly brought out in Cordes' paper (*vide infra*), where, of 57 cases, there were 48 showing atresia and only 9 stenoses.

It is quite evident, in going over lists of recorded cases, that in the duodenum *the occurrence of more than one obstruction is quite exceptional.*

(*c*) *Seat of malformation.*

Reference to the literature brings out the fact that the malformation in the duodenum is usually situated close to the point of entrance of the ductus communis.

Perry and Shaw[8] investigated 7 cases. In 4 the obstruction was at or near the biliary papilla; in 3, at the lowest part of the duodenum; and in 1 it was close to the pylorus.

Cordes[9] reports 1 case, and summarises 56 found in the literature. She finds that "occlusion of the duodenum is most frequently very near the opening of the common bile-duct into the duodenum, either above it or below it." It was above the duct in 20 cases (in 12, immediately above), and below in 13 (in 2, immediately below).

Spriggs[10] describes 1 case where there was dilatation of the stomach and duodenum, the latter structure ending abruptly at the "point of entrance of the bile-duct." There is no note of whether the bile-duct opened above or below the stricture.

Keith[11] examined 8 specimens. "Immediately above the entrance of the common bile-duct the duodenum is occluded by a septum, which is covered on each side by mucous membrane, and contains muscular strata continuous with the muscular coats of the bowel."

(*d*) *Abnormality of ducts.*

In connection with the relationship of the occlusion to the bile-ducts it is worthy of mention that several authors report the occurrence of *accessory ducts.* In the cases reported by Cordes (*loc. cit.*) there was an anomaly of the common bile duct—"a branch of the same having been found leading into the dilated duodenum above the atresia. . . . An accessory pancreatic duct is not present." This writer quotes Förster, that "sometimes the ductus choledochus divides into two branches, of which one opens into the stomach or even into the large intestine." She also judges that, in two cases reported by Theremin as stenoses, what was supposed by him to be stenosed bowel was probably a branch duct. She states further that in "four other cases" in her series the clinical history and autopsy findings together render it very probable that a branch duct existed.

Keith (*loc. cit.*) mentions two cases in which "an accessory pancreatic duct can be seen to open in the duodenum above the septum." Lewis (Keibel and Mall[12]) mentions Tandler having found in an 8·5 mm. embryo a complete obliteration between the outlets of the dorsal pancreatic duct and the ductus communis.

(*e*) *Etiology.*

The etiology of congenital atresia or stenosis of the bowel has been the subject of much speculation. Various causes —developmental, peritonitis, volvulus, intussusception, post-ulcerative contraction, embolism or thrombosis of mesenteric vessels, enlarged valvulae conniventes (Spriggs, *loc. cit.*)— have been invoked, and different writers have gone, more or less fully, into the *pros* and *cons*. It is interesting to notice how authors have come more and more to regard the condition as depending on some error of development. "A number of facts, such as the repeated occurrence of duodenal occlusion near the site of the papilla, the existence, in probably more than one case, of anomalies of the duct system, the absence of Brunner's glands (in one case at least) at the point of and near the atresia, the striking absence of any signs of disease to which the condition might be traced, and the occurrence of other malformations than that of the duodenum in a certain number of the cases, lead me to think that an error of development not yet explained may underlie this condition" (Cordes, *loc. cit.*, p. 423). Again, "Most if not all malformations in the duodenum are associated in some way with the development of the large glands from this region" (Clogg.[13]). Credit is due to Bland-Sutton[14] for drawing attention to the occurrence of malformations at the seat of "embryological events." He supports his statement by reference to imperforate pharynx occurring "at the spot where foregut and stomodaeum come into contact. An imperforate or septate duodenum occurs just above the bile papilla, the region where the diverticulum issues to form the liver and pancreas. Imperforate rectum and anus are due to imperfect union of the hind-gut and proctodaeum. Lastly, imperforate ileum occurs in the region where the primitive alimentary canal is in communication with the yolk-sac by means of the vitelline duct."

The observation by Tandler[14] of the obliteration of the lumen of the duodenum as a phase of the *normal* development of this part of the bowel has certainly paved the way to a more accurate conception of duodenal malformation. It may or may not be invoked in the case of obstruction in the neighbourhood of the biliary papilla; but it certainly helps to an understanding of those cases where the obstruction is situated some little distance from the entry of the ductus communis. Following on Tandler comes Forssner (*loc. cit.*), who holds that an ingrowth of the mesenchyme, before the re-establishment of the duodenal lumen has been effected, offers a solution of the difficulty. The obstruction, according to him, is composed of connective-tissue embedded in epithelium. If the connective-tissue bridge be thin, a membrane is formed: if thicker, the interruption may take the form of a cord connecting the two blind ends of the bowel. Should the connective-tissue be incomplete, or so weak that at one spot it tears, there will be an incomplete membrane—crescentic or like an iris. Through subsequent changes, occurring during foetal life, a thick obstruction may be thinned down to form a membrane, or a stenosis may be transformed into a valve.

Before leaving this subject I would draw attention to Gray's[15] suggestion as to the etiology in a case of complete interruption of the duodenum, which he investigated some two years ago. He advances the theory that during the third month the passing across the upper abdomen from left to right of the distal ileum and the caecum, drawing with them their fold of mesentery, may result, if the mesentery be sufficiently taut, in nipping through the duodenum across which they pass.

The only other theory of origin requiring mention here is that of *fœtal peritonitis*. I shall have again to refer to this, when considering the subject of occlusion in the jejuno-ileum. But it has been brought forward in duodenal cases. The chief arguments in its favour, as advanced by Spriggs (*loc. cit.*), are (1) the obstruction may occur at a part of the bowel which is not the seat of one of Bland-Sutton's "embryological events." Thus, of Perry and Shaw's 7 cases, in 3 only was the obstruction at the site of the papilla. (2) The presence of adhesions. That these evidence a precedent peritonitis is almost beyond doubt; but, as Spriggs says, "it may be that the obstruction was the cause of the slight signs of localised peritonitis found in some cases, and not the effect, as has been generally assumed."

My dismissal of peritonitis as an etiological factor in duodenal malformation may seem rather summary; but I think it is hardly necessary to consider it at length, when the production of the malformation is so eminently capable of explanation by the facts of normal development. Bland-Sutton's suggestion is valuable, and Gray's theory as to the etiology in his case is ingenious; but it seems to me that the normal obliteration during development is *the* important fact. The discovery of this by Tandler, and its further investigation and application by Forssner, have resulted in placing in our hands a working theory which for simplicity and probability it will be hard to better.

REMARKS.

If the specimen which I have described be now considered it is seen that there is (1) a septum-formation proximal to the biliary papilla; and (2) a second septum near the distal end of the duodenum. Between these septa the discharge from the biliary papilla is confined, and by its pressure the portion of bowel concerned has been distended to form a cyst.

So far this seems simple enough. Microscopic examination shows, however, that these two septa markedly differ in structure from one another.

The distal septum is of simple construction—two layers of epithelium, separated by a submucosa. The proximal is traversed by a passage lined by epithelium and communicating dorsally with the ducts of the pancreas (? and liver); ventrally, it communicates with the lumen of the pyloric part of the bowel.

It might be held that this canal in the substance of the septum represents an abnormal branching of the biliary ducts; but the presence of goblet-cells in its epithelium and of muscular tissue in the substance of the septum opens up the possibility of its being originally a stenosed portion of the duodenal lumen. The accumulation of bile distal to the stenosis is favoured by the septum lower down in the bowel, and the resulting distension of the bowel has, instead of opening up the stenosis in a direction towards the pylorus, tilted up the narrow portion, so that it comes to form a valve. Pressure on this valve from the distal (biliary) side has served to make the obstruction more complete.

The occurrence of the double obstruction is distinctly unusual (*vide supra*, p. 29). The microscopic characters of the proximal septum are in support of Theremin's views, already quoted (*vide supra*, p. 30) as having been adversely criticised by Cordes. In the drawing (Fig. 3) the pancreas is represented as clumped together and practically encircling the bowel at the proximal pole of the cyst. It was not noted whether the gland was prolonged at all behind the stomach. This disposition of the pancreas may have some relation to the stenosis of the neighbouring portion of the bowel. It seems to me that Forssner's theory of ingrowth of mesenchyme satisfactorily explains the etiology of both proximal and distal occlusions in this specimen.

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[3] Ballantyne, *Manual of Antenatal Pathology and Hygiene: The Embryo*, Edinburgh, 1904, p. 532.

[4] Silbermann, *Jahrbuch für Kinderheilkunde und physische Erziehung*, N.F., Leipzig, 1882, Band XVIII, S. 420 *et seq.*

[5] Gärtner, *Ibid.*, 1883, Band XX, S. 403 *et seq.*

[6] Schlegel, quoted by Braun in *Bruns Beiträge*, 1902, Band XXXIV, S. 995.

[7] Forssner, *Anatomische Hefte*, Wiesbaden, 1907, Band XXXIV, Heft 102.

[8] Perry and Shaw, *Guy's Hospital Reports*, 1894, vol. l third series XXXV), p. 174.

[9] Cordes, *Archives of Pediatrics*, 1901, vol. xviii, p. 401 *et seq.*

[10] Spriggs, *Lancet*, 1910, vol. i, p. 94.

[11] Keith, *British Medical Journal*, 1910, vol. i, p. 303.

[12] Keibel and Mall, *Manual of Human Embryology*, London, 1912, vol. ii, p. 382.

[13] Clogg, *Lancet*, 1904, vol. ii, p. 1773.

[14] Tandler, quoted by Forssner, *loc. cit.*

[15] Gray, *Glasgow Medical Journal*, 1910, vol. lxxiv, p. 116 *et seq.*

(*To be continued.*)

Obituary.

JOHN MACALLUM CAMERON, M.B., C.M. GLASG, D.P.H., DALMUIR.

WE regret to have to record the death, which took place on 11th June, of Dr. J. M. Cameron, of Dalmuir.

Dr. Cameron, who was a native of Morven, came to Glasgow at an early age, and, after a brief time in business, he studied medicine at the University, where he took the degrees of M.B. and C.M. in 1879. He almost immediately thereafter commenced practice in Old Kilpatrick, and in a brief time had an extensive connection. The expansion of Dalmuir, coincident with the growth of the shipbuilding industry at Clydebank, led Dr. Cameron to take up his residence there, and for many years he and his assistants engaged in an extensive practice between Clydebank and Dumbarton, including Bowling and Old Kilpatrick. Widely known and highly respected, his semi-jubilee was made the occasion of a public gathering in Old Kilpatrick, at which he received a substantial cheque, subscribed to by his numerous admirers in the district.

In addition to his large private practice, Dr. Cameron held several public appointments, among others those of Parochial Medical Officer to the Western District of Old Kilpatrick, and Medical Officer to the Post Office and Education Department.

In failing health for some years, deceased continued at work till less than a fortnight before his death, and the end came as a painful surprise to his many friends. He is survived by a widow and a son and daughter.

CURRENT TOPICS.

APPOINTMENT OF DR. MONRO TO THE CHAIR OF MEDICINE. —When the news reached us on the 6th of last month that the King had, on the recommendation of the Secretary of State for Scotland, appointed Dr. Thomas Kirkpatrick Monro to the Chair of Practice of Medicine, we felt that a long career of hard and conscientious work had been crowned. The new Professor is well known in Glasgow, while his contributions to medical literature, and more especially his *Manual of Medicine*, have made his name familiar in other medical schools, both in Great Britain and in America. As Visiting Physician to the Royal Infirmary he has won a reputation as a clinician of the first rank, and as occupant of the Chair of Medicine at St. Mungo's College his lectures attracted large classes of students.

Professor Monro goes to a Chair of old and honourable traditions, and we have every assurance in entrusting their maintenance to his hands. We offer him our hearty congratulations on his well-merited honour.

RESIGNATION OF THE SENIOR EDITOR.—Following on our congratulations to Professor Monro, we regret to have to announce that he feels that he can no longer give sufficient time to the duties of editing the *Journal*. A member of the staff of the *Journal* for a period of twenty-one years, Dr. Monro has for the last eleven of these occupied the post of senior Editor. Few outside the staff know the amount of time and care which he devoted to the interests of the *Journal*, and none can more fully appreciate the loss occasioned by his resignation. On behalf of our readers we beg to tender our thanks for his long services, given without ostentation, and with the thoroughness which characterises all work to which he sets his hand.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS: "FINLAYSON MEMORIAL" LECTURE.—The Finlayson Memorial Lecture was delivered in the Faculty Hall on the afternoon of Friday, 6th June. The lecturer, Sir Thomas Clifford Allbutt, K.C.B., LL.D., M.D., Regius Professor of Physic, Cambridge, took as his subject "Byzantine Medicine from Galen to Salerno," and he was listened to by a large and appreciative audience. The lecture will appear in a future issue of the *Journal.*

APPOINTMENTS.—The following appointments have recently been made:—

University of Glasgow.—Thomas Kirkpatrick Monro, M.A., M.D.Glasg. (M.B. 1888), F.R.F.P.S.G., to be Professor of Practice of Medicine, *vice* Samson Gemmell, M.D., deceased.

Royal Infirmary.—William R. Jack, B.Sc., M.D. Glasg. (M.B. 1889), F.R.F.P.S.G., to be Visiting Physician, *vice* G. S. Middleton, M.A., M.D., retired.

Western Infirmary.—Francis J. Charteris, M.B. Glasg. (1897), to be Assistant Physician, *vice* Dr. R. S. Fullarton, resigned. G. H. Clark, M.B.Glasg. (1901), and D. R. Kilpatrick, M.D.Glasg. (M.B. 1901), have been promoted full Dispensary Physicians.

Glasgow County Association (T.F.)—The Army Council have approved of Colonel D. J. Mackintosh, M.V.O., M.B., LL.D., Assistant Director of Medical Services, Lowland Division, being appointed to a seat as a military member of the Territorial Force Association for the County of the City of Glasgow.

J. J. Buchan, M.D.Glasg. (M.B. 1898), D.P.H.Camb., Medical Officer of Health, St. Helens, Lancs., to be Medical Officer of Health of Bradford.

Ernest Watt, M.D.Glasg. (M.B. 1897), D.P.H.Camb., Chief Tuberculosis Officer, Co. Durham, to be additional Medical Inspector of the Local Government Board for Scotland.

Mary J. Menzies, M.B.Ed. (1900), D.P.H., to be Lady Medical Inspector to the Local Government Board for Scotland, *vice* Elizabeth M'Vail, M.B.Glasg., resigned.

William Robertson, M.D.Glasg. (M.B. 1887), D.P.H., F.P.S., to be Chief Tuberculosis Officer for the Burgh of Leith.

DINNER AND PRESENTATION TO DR. JOHN ADAMS.—At the meeting of the Glasgow Central Division of the British Medical Association on 19th May, it was decided to entertain the representative, Dr. John Adams, to dinner, and to make him a presentation in recognition of the services he has rendered to the Division during the past five years, and especially during the past two years in which the consideration of the Insurance Act has thrown upon the representative particularly arduous duties.

The dinner was held in the "Grosvenor" on the evening of Tuesday, 10th June, when a company of about forty sat down. Dr. R. Jardine occupied the chair, and in the course of the evening handed to the guest a fitted dressing case. Dr. Adams suitably replied. There was a good programme of song and recitation by various of the diners, and an enjoyable evening passed very quickly.

GLASGOW UNIVERSITY CLUB, LONDON.—The dinner of the Glasgow University Club, London, which was held in the Trocadero Restaurant on 30th May, under the chairmanship of the Lord Rector, Mr. Augustine Birrell, M.P., was attended by about 250 guests, including Principal Sir Donald MacAlister, Sir Harry Verney, M.P., Sir Henry Craik, M.P., Sir William Wallace, Sir W. J. Collins, Sir W. Robertson Nicoll, Sir A. Pearce Gould, Sir J. M'Call, Professor John Ferguson, Professor George C. Foster, Professor J. M. Thomson, Dr. J. J. Dobbie, Dr. W. George Black, Dr. W. Walton Don, Dr. C. O. Hawthorne, Mr. MacCallum Scott, M.P., Mr. Pringle, M.P., the Rev. W. Parker Hanks, Dr. W. Craig Henderson, Dr. D. S. Roxburgh, Mr. Thomas Seccombe, Mr. J. T. J. Greig, editor *Glasgow University Magazine;* Mr. Ian D. Grant, president of the Students' Representative Council; Mr. Harkness, president of the Students' Union; Dr. Geo. M'Gowan, Mr. Francis Birrell, Dr. M. Cameron Blair, Professor J. Adams, the Rev. Geo. P. Gould, Mr. Thomas Shields, Colonel Peterkin, R.A.M.C., Dr. J. H. T. Tudsbery, Dr. A. Cumming Grant, Mr. W. Neil, Dr. Dan M'Kenzie, Dr. Peter Abercrombie, the Rev. James Cunningham, Dr. A. D. Macnair, Dr. John Morton, Dr. Andrew Wylie, Dr. Alex. Macphail, the Rev. W. M. M'Phail, and Mr. Eveleigh Nash.

Mr. Birrell, in proposing the toast of "The University and the Club," said he was deeply indebted to the club for having elected him an honorary member. In the line of life which for some years past he had pursued they were often rewarded beyond their merits, and they suffered rebuffs also far beyond their deserts. But they set one against the other, and so contrived to live. A very remarkable Scottish Member of Parliament, who no longer sat in Parliament, a man of most picturesque appearance and the owner of one of the finest styles, once told him that he had failed to get into the Travellers' Club. That was his rebuff, but he told the secretary that while he was sorry he had not been elected, he did not know how uncontrollable his grief might have been but for the cheering circumstance that he had received the gratifying intelligence that he had been elected a vice-president for life of the Battersea Radical and Liberal Association. That was how politicians continued to live. Amid rebuffs, if rebuffs they were, his spirits were raised and his heart consoled by the knowledge that he was an honorary member of this club, and that for as many years as he was likely to live he would at all events be invited as a guest to the annual banquet of the club, indeed long after his Rectorial address had been completely forgotten. He thought that moment had already arrived. Hence the confidence with which he proposed the toast of "The University and the Club." He was glad to see that the club prospered, and to see that they wished to extend its area and increase the membership. The number of graduates of the University of Glasgow who were resident in London and the vast territory which surrounded it was sure to increase rather than diminish as time went on, and it was therefore all the more important that their roll of 357 members should be increased. University clubs were apt to succeed if well arranged, and there was no reason why their club should not be well and economically managed and largely increased. He had more confidence in it than in other institutions which were not in his mind. He must not be unmindful of Glasgow University. He was conscious of the honour that was done him by curious methods of which he did not wholly approve, by falsehoods for which there could be no justification, by caricatures of which he was proud to think there was no substantiation either in nature or art—by methods of that kind he attained the great position he occupied and would continue to occupy till by the fluxion of time he would have to go. He was one of those men who never resigned. He once received three bits of advice. He was told that if he wanted to sit on the front bench he should never ask for anything, never refuse anything, and never resign. He had done none of those things. He had asked for nothing, he could not recall that he had ever refused anything, and he did not propose to resign. The University of Glasgow had conferred on him by methods to which he had already referred an honour which, without humour or affectation, but with the most literal truth, he regarded as one of the greatest honours of his life. He was a man of Scottish blood, and of purely Scottish descent and of Scottish education, though, he admitted, carried on in England in a Scottish household where everything was Scottish except the accent. He regretted that, and if he could start his life over again he would endeavour not to recover but to attain the accent by toil and labour, for in its own way it was an avenue to power. He had had a hand in the two Universities of Belfast and Dublin, two Universities which were thriving successfully. There were Universities all over the place. There was one at Bristol. But after all to the old Universities there must be some preference shown. It was a pleasure to think of their long centuries of use, and there was something fascinating in studying their histories, although he did not think they had been compiled quite as fully as might be done. There was the University of Glasgow—ancient, pre-Reformation. Without saying a word on religious controversy, he thought it was always a great advantage to date back before that event. They had been there, and their life was all the richer and stronger for having been so. He proposed to them with a full heart and romantic associations, happily justified, to drink with enthusiasm and with filial pride and zeal to the University and the club.

The toast having been pledged with great heartiness,

The Rev. W. Parker Hanks gave the "Health of the Guests," and recalled memories of the happy influences exercised in the class-rooms of the University.

Dr. George Ogilvie replied in a humorous speech.

Surgeon-General Baptie, V.C., in proposing the health of the Chairman, said he was reminded by the presence of the Lord Rector of the time when he assisted in a tumultuous procession up Sauchiehall Street at the reception of Mr. Gladstone, and he felt sure that the advent of a new Lord Rector was still attended with the same wealth of welcome as they gave to Mr. Birrell's illustrious predecessor. They had had men of all political complexions as Lord Rector, men like Lord Rosebery, Mr. Balfour, Lord Curzon, and Mr. Asquith, but they had all been prominent in art, science, or literature, and they were happy to have been able to do honour to them in the position to which they had been elected.

Previous to the dinner the annual meeting of the club was held, at which the report of the Council was adopted. From this it appeared that the club now has a membership of 357. A special appeal is made to graduates and old students of the University resident in or near London to join the club. Committees having been formed in London and in Glasgow for the promotion of a memorial to the late Lord Lister, the Council felt that the club would welcome an opportunity of paying honour to the memory of their late president by voting a donation to the memorial fund. They therefore recommended a donation of 10 guineas to be allocated to the Glasgow memorial. A special tribute was paid by the Council to the services which Dr. Craig Henderson had rendered to the club during the last seven years as honorary secretary, and the Council agreed to signalise those services by nominating him as a vice-president on the occasion of his resignation. The accounts of the past year show a satisfactory balance, the expenditure including a donation of 50 guineas to the Glasgow University Athletic Club.

A NURSING HOME FOR PATIENTS OF LIMITED MEANS.—The want of a nursing home in which the expenses would be within the reach of patients of limited means has long been felt. An attempt to solve the problem has just been made in Edinburgh, and particulars have recently appeared in the press.

A beginning was made in 1910, when some preliminary subscriptions were obtained, chiefly from the medical profession itself, which has responded handsomely all through; then in 1911 a public meeting was held in Edinburgh, under the chairmanship of Sir Robert Usher, Bart., when an influential committee was formed, with Lord Dunedin as chairman, Professor Lodge as chairman of executive, and Dr. Chalmers Watson as honorary secretary; an appeal then made for funds was so well responded to by the public that now £13,000 out of the £13,500 asked for has been received. Public sympathy was excited in a remarkable manner when it was made clear that, provided the initial expense of buildings and furnishings was met, the home could be made self-supporting, the patients paying from 1 to 3 guineas a week, according to the accommodation supplied. Public sympathy was aided to make itself practically effective by means of a band of voluntary lady collectors, 250 strong, who in all parts of Scotland brought the scheme intelligently before the notice of the charitable. As a result over 10,000 subscribers gave sums varying from £250 to 3d. Meantime a pioneer home managed on the principles above described was being successfully carried on in Rutland Square; but it was on a much smaller scale than that now available, and it has been merged in the latter. Still, it has served to open the way and make the public more fully aware of the possibilities of such an institution.

The home, formally opened by Lord Balfour of Burleigh on 21st May, is situated in what may be called the hospital quarter of Edinburgh; it is within a stone's throw of the Chalmers Hospital, an institution with somewhat similar aims, although not intended for quite the same class of patients, and of the Royal Maternity Hospital, and it is within sight of the Royal Infirmary. It is thus, so to say, within the sphere of the daily work of the various physicians and surgeons who are attached to these institutions, and who will doubtless be amongst the medical men who will give operative and other treatment in the new home. The home came into being through the adaptation of three continuous villa residences in Chalmers Street, and Mr. T. Duncan Rhind, A.R.I.B.A., deserves great praise for the skilful manner in which he has carried through the necessary changes and extensions. There are beds both for male and female patients; two of the wards have each 8 beds, five of them have 3 beds each, and there are twelve private rooms with 1 bed in each. There are two operating theatres, with a sterilising room between, and there is an anæsthetic room with wide folding doors; there is an electric lift big enough to take a bed with patient in it, and a nurse, and there is another for food. In place of bells there is a silent system of electric signalling, and there are rooms for *x*-ray treatment, for hydrotherapeutic treatment, for massage, &c., as well as a dark room for photographic work. In addition, there is accommodation for the matron and nurses, for the maids, for the doctor, for convalescent patients, and a bright room with four cots for children. At each end of the building there is a fire-escape iron stair which leads to the back green, and is connected with each floor.

The experiment will be watched with interest. In most nursing homes at present a certain number of patients are admitted at reduced rates, the loss being made good from the receipts of the more highly priced rooms. In the absence of such a source of income it will be interesting to see if the new home can be made self-supporting. Should such be the case, the experiment will doubtless be repeated in other cities and large towns.

R.A.M.C. (T.F.): FIELD DAY OF GLASGOW UNITS.—A combined parade of the Glasgow Units of the Royal Army Medical Corps (Territorial) was held on 24th May. The parade fell in at the North British Railway Station at Maryhill, and marched to Blackhill, when field exercises were carried out. The parade was under the command of Lieut.-Colonel A. D. Moffat, M.D., T.D., with Captain Hole, R.A.M.C., Adjutant, and the work of bearer- and tent-divisions in the field were carried out by the different Units. Colonel Mackintosh, M.V.O., Assistant Director of Medical Services of the Lowland Division T.F., accompanied by Major Erskine, R.A.M.C., Staff Officer, visited the ground and inspected the work of the Units. There was a good turnout of members of the corps, and the inspecting officer expressed himself gratified with the way in which the programme was carried through.

The Field Ambulances encamp this year at Irvine from 18th July till 1st August, and it is expected that they will take part in the combined operations directed by Major-General Spens, commanding the Lowland Division.

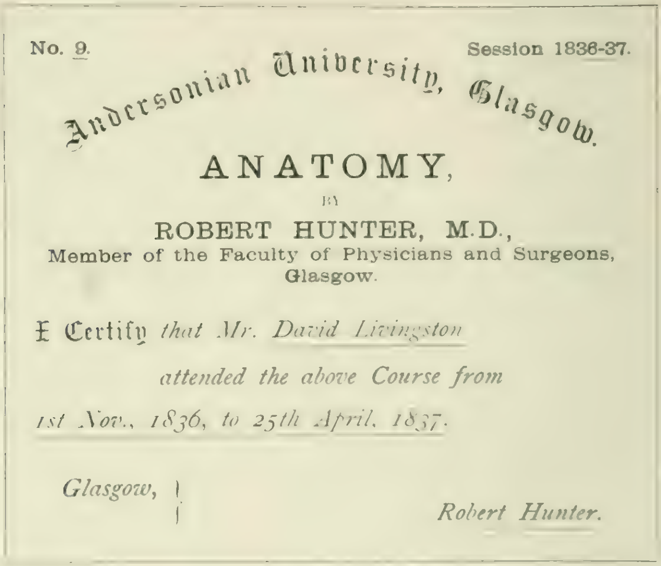
David Livingstone's Medical Nonage.—All who have had occasion to consult biographies of Dr. David Livingstone must have been greatly surprised, if not annoyed, at the glaring discrepancies encountered. In the matter of his medical education this want of unanimity is specially marked, the chroniclers offering a most bewildering choice of schools and schoolmasters. That such chaotic ignorance should exist concerning one of whom we are all so proud, and who was so very recently alive, is in some ways remarkable, and is, perhaps, not altogether to our credit. Consequently, it occurred to us that we would merely be performing an already much overdue task if we collected all the documentary evidence bearing on Livingstone's tutelage. At the present moment, we regret to say, class certificates cannot be produced to attest that this great Scotsman attended a complete medical course, though we know, from the fact that he was accepted for examination by the Faculty of Physicians and Surgeons of Glasgow, that such must have been possessed by him. And while some of the missing certificates may yet be found, not a few are most likely lost for good, hence there is probably nothing to be gained by delaying publication of our achievement, which, imperfect as it is, has only been rendered possible by the gathering together of relics in the Livingstone Centenary Exhibition by Sir T. Carlaw Martin, Director of the Royal Scottish Museum, Edinburgh, to whom we have much pleasure in acknowledging our indebtedness; and to whom we are very specially obliged for skilled help in the deciphering of signatures.

The class tickets in the subjoined list, at present on view in the Livingstone Centenary Exhibition, are the property of Captain D. Livingstone Bruce, of Edinburgh, who has very graciously permitted us to make this use of them, as also to give verbatim copies of an Andersonian class ticket, a certificate from Professor Graham, and a certificate from the physicians of Aldersgate Dispensary.

ANDERSONIAN UNIVERSITY, GLASGOW.

Subject.	Session.	Dates Signed For.	No.	Teacher.	Professors' Remarks.
Chemistry, . .	1836-37	Nov. 1st, 1836, till April 25th, 1837.	17	Thomas Graham, F.R.S. Edin., and M.F.P.S.G.[1]	...
Anatomy, . . .	Do.	Do., do.	9	Robert Hunter, M.D., M.F.P.S.G.[2]	...
Anatomy, Practical, .	Do.	Do., do.	6	Do.	...
Chemistry, . .	1837-38	Nov. 3rd, 1837, till April 25th, 1838.	40	William Gregory, M.D., F.R.S.Edin., M.F.P.S.G.	Except a part of time, during which I was confined by severe illness to bed.
Chemistry, Practical,	Do.	Nov. 3rd, 1837, till Jan. 31st, 1838.	...	Do.	The number of students admitted to this course is 25.
Surgery, Lectures on,	Do.	Nov. 8th, 1837, till April 25th, 1838.	52	James Adair Lawrie, M.D., M.F.P.S.G.[3]	Regularly and diligently.
Surgery, Lectures on,[5]	Do.	Do., do.	51	Do.	Regularly.
Materia Medica, .	Do.	Nov. 5th, 1837, till April 25th, 1838.	12	Andrew Buchanan, M.D., M.F.P.S.G.[4]	...
Anatomy, . . .	1838-39	Nov. 1st, 1838, till April 25th, 1839.	...	Robert Hunter, M.D., M.F.P.S.G.	...

This is a copy of one of David Livingstone's Andersonian class tickets:—



No. 9. Session 1836-37.

Andersonian University, Glasgow.

ANATOMY,

BY

ROBERT HUNTER, M.D.,
Member of the Faculty of Physicians and Surgeons,
Glasgow.

I Certify *that Mr. David Livingston*

attended the above Course from

1st Nov., 1836, to 25th April, 1837.

Glasgow,

Robert Hunter.

Underlined words are in writing.

Footnotes to List.

[1] Biographical notices of these Professors will be found under "Roll of Members," in *Memorials of the Faculty of Physicians and Surgeons of Glasgow, 1599-1850*, by Alexander Duncan, B.A.Lond. (now LL.D.), Secretary and Librarian of the Faculty, 1896.

In the Act of 1850 there was included a provision for altering the name of "Member" to "Fellow." *Ibid.*

[2] Professor Hunter, as President of the Faculty, on 18th September, 1857, publicly presented Dr. Livingstone with the Diploma of Honorary Fellowship, to which he had been unanimously elected on the previous 5th of January. It cannot be said that the President's speech betrayed any very personal recollection of the former Andersonian student, unless the following is so interpreted :—"It was now nearly twenty years since Dr. Livingstone was seen modestly, yet zealously, prosecuting his medical studies in Glasgow." For a full report of this oration and Dr. Livingstone's reply see the *Glasgow Medical Journal*, 1858, p. 374-7.

[3] Professor Lawrie's grandfather and father were successively ministers of Loudon parish, and enjoyed the intimate friendship of Robert Burns. Professor Lawrie's uncle, Dr. James M'Kitterick Adair, a relative of Mrs. Dunlop and the son of a physician in Ayr, accompanied Burns on his tour in the Vale of Devon, when he fell in love with—and later married—

Other Andersonian professors during Livingstone's pupilage were—Medicine, Alexander John Hannay, M.D. (Edin.), M.F.P.S.G.; Midwifery, James Brown, M.F.P.S.G.; Botany, William Cumin (Cummin), M.A., M.D., M.F.P.S.G.; and Medical Jurisprudence, George Watt, M.F.P.S.G.[6]

There are also to be seen at the Livingstone Centenary Exhibition a certificate in holograph from Professor Thomas Graham, and another in writing from the physicians of the Aldersgate Street Dispensary:—

ANDERSONIAN UNIVERSITY,
GLASGOW, *26th May, 1837.*

I certify that Mr. David Livingston attended Chemistry Class during Session 1837 with great regularity, that he submitted to the examinations, in which he acquitted himself in a creditable manner, and that his general conduct, so far as it came under my notice, was most exemplary, and in proficiency creditable.

(Sgd.) THO. GRAHAM,
Prof. of Chemistry.

We, the undersigned physicians, do hereby certify that Mr. David Livingston did regularly attend the Medical Practice of the General Dispensary, Aldersgate, London, during six months, viz., from January to June inclusive, 1840.

Witness our hands,
11th November, 1840,

(Sgd.) WILLIAM HOLT YATES, M.D.
JAS. RISDON BENNETT, M.D.
ARTHUR DAVIS.

In all likelihood David Livingston was enrolled as a

Charlotte Hamilton, one of Burns' heroines and sister to Gavin Hamilton of Mauchline. The Rev. George James Lawrie, D.D., a brother of the surgeon and incumbent of Monkton parish, was a poet of considerable gifts: he is specially known to-day for his "D'ye mind langsyne?" and a "Sang to the bairn." *Robert Burns and the Medical Profession*, by William Findlay, M.D., 1898, may be consulted for further particulars about Dr. Adair.

[4] Extracts from two letters, received by Professor Andrew Buchanan from Dr. Livingstone, and dated respectively, Tette, 19th December, 1858, and River Shiré, 2nd June, 1859, are published in the *Glasgow Medical Journal*, 1860, pp. 371-3.

[5] Probably one of these is "Practical Surgery," or what is now designated "Clinical Surgery." *Cf.* A. Duncan, *loc cit.*, p. 179.

[6] *Cf.* A. Duncan, *loc. cit.*

student at the Glasgow Royal Infirmary, but Dr. Thom, who very kindly undertook to investigate this question, informs us that he cannot find any such name in the Infirmary Records, which, however, do not go further back than 1838.

Dr. William Hunter, Dean of Medical College, Charing Cross Hospital, London, who most generously contributed to our enquiry, declares that the Records kept at the time David Livingston was a student of this School give very little detail. Nevertheless he has managed to unearth for us the following:—

Joined the School—11th November, 1840.

Subjects taken.	Period.	Names of Teachers.
Midwifery.	One session.	Dr. Chowne.
Botany.	One session.	Dr. Willshire.
Medical Practice.	Half year.	Drs. Shearman, Golding, and Chowne.

Other teachers in the Charing Cross Hospital Medical School at the same period were—Medicine, Dr. Bennett; Surgery, Messrs. Howship, Hancock, and Partridge; Materia Medica, Dr. Steggall; Anatomy and Physiology, Mr. Hancock; Chemistry, Mr. G. Fownes; and Medical Jurisprudence, Drs. Chowne and Bennett.

Since Livingstone's examination by the Glasgow Faculty was concluded on 16th November, 1840, it is obvious that he could not possibly have commenced his studies at Charing Cross on 11th November of the same year. We therefore suggest that when Livingstone, just prior to setting out for the North, was gathering together the evidence attesting his attendance at medical classes, it was discovered that he had not signed the album of this School; and that he there and then entered his name. Such a supposition receives support from the fact that the certificate granted by the Aldersgate Dispensary physicians is also dated 11th November, 1840, though the actual term of attendance signed for is from January to June.

Dr. Alexander Duncan, the venerable and much-esteemed historian of the Faculty, who has ungrudgingly placed his wide and intimate knowledge of medical affairs at our disposal, informs us, after carefully looking into the Record Books, that in 1840 candidates for the Licence were required to show that they had been employed in the following course of studies for four winter sessions, or for three winter sessions and two summer sessions, so that the whole period of attendance shall not be less than three years complete:—

Chemistry (lectures),	One course of six months.
Chemistry (practical),	,, three ,,
Botany,	,, ,, ,,
Anatomy (lectures),	Two courses of six ,,
Anatomy (practical),	One course of ,, ,,
Medicine, Theory of,[1]	,, ,, ,, ,,
Medicine, Practice of,	,, ,, ,, ,,
Medicine, Clinical,	,, ,, ,, ,,
Surgery,	Two courses of ,, ,,
Surgery, Clinical,	One course of ,, ,,
Medical Jurisprudence and Police,	,, ,, ,, ,,
Materia Medica,	,, ,, ,, ,,
Midwifery,	,, ,, ,, ,,
A public hospital,	Attendance of 18 months.
Surgeon's or apothecary's shop,	,, 12 ,,

On comparing Dr. Duncan's list with the actual certificates and records, it will be seen that evidence is lacking concerning Practice of Medicine, Theory of Medicine, Clinical Medicine, Surgery or Clinical Surgery, Medical Jurisprudence and Police, Hospital Practice, and the Compounding and Dispensing of Drugs (apothecary's shop). On the other hand, it should be pointed out that the attendances at Chemistry were in excess of the Faculty requirements.

David Livingstone, as was then the custom, had to submit to but a single examination for the Faculty Licence; and below are exact transcripts of the minutes concerning it, kindly supplied by Dr. Duncan:—

Faculty Hall, *16th of 11th Month, 1840.*

We have carefully examined David Livingston, and find him qualified to proceed to further trial.—To write an Essay on Paracentesis Thoracis.

(Sgd.) John Maxwell.
James Watson.[2]
Wm. Macdonald.
Wm. Weir.

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[1] "The Theory of Medicine included the subjects now connoted by the terms Physiology, Pathology, and Preventive Medicine."—A. Duncan, *loc. cit.*, p. 174.

[2] President 1838-41, 1849-52, and 1857-60.

FACULTY HALL, *16 Nov., 1840.*

At a general meeting of Examinators Mr. David Livingston appeared, and his Essay [1] having been approved of, and he having taken the Oath,[2] he was Licensed accordingly.

(Sgd.) JOHN MAXWELL.

The following is the entry in the List of Licentiates of the Faculty in Dr. Livingstone's own handwriting:—

David Livingston, Blantyre (birthplace), 16th November, 1840.

It is to be noted that the spelling of Livingstone's name in all these certificates and records shows no final "e." After the Doctor's return home from his first great journey, in 1856, his father suggested to him that the final "e" should be added, that being the original and correct spelling:[3] which happy suggestion, it may also be observed, enabled our nimble-witted contemporary, *Punch*, to round off a most apposite elegy with—

Let marble crumble: this is LIVING-STONE!

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[1] This must not be confounded with the "Probationary Essay" exacted from aspirants to membership. It would appear that this essay, termed by Dr. Livingstone a "Thesis," procured for him "an examination rather more severe and prolonged than usual among examining bodies." *Cf.* "Autobiography" prefaced to *Travels and Researches in South Africa*, November, 1857.

[2] The Oath and the Diploma for the Licence are at present on exhibition in Edinburgh: they are the property of Mrs. Oswell Livingstone, Harpenden.

[3] *Cf. A Guide to the Livingstone Centenary Exhibition*, opened 18th March, 1913.

On the silver medal from the Société de Géographie à Paris is engraved:—"Au Rd. David Livingston pour la découverte du lac Ngami 1849," while on the gold medal, received afterwards from the same Société, the words are, "Au Révérend David Livingstone pour ses voyages à travers l'Afrique australe. Prix Annuel, 1854." These medals are the property of Captain D. Livingstone Bruce. In quite a number of addresses the title of "Reverend" is given. "Doctor" is conspicuous by its absence from these parchments.

MEETINGS OF SOCIETIES.

SCOTTISH OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

THE SOCIETY met in the Victoria Infirmary, Glasgow, on Saturday, 31st May, Dr. Brown Kelly in the chair.

DR. BROWN KELLY contributed a paper on "Nasal Thermometry," a method of determining the influence of the nose on the temperature of the inspired air, and demonstrated its use. Tables were given showing the difference in temperature between the inspired and the expired air and the variations which occurred in varying degrees of patency of the nasal passages.

Dr. Brown Kelly also showed—

1. A woman who had been operated on by Mr. Parry for compression of the trachea and œsophagus by an abscess situated between these structures.
2. A man with double laryngeal abductor paralysis and other symptoms of central nervous disease, due probably to patchy gummatous lepto-meningitis of the medulla and of the cord in the cervical and lumbo-sacral regions.
3. A woman with hysterical aphonia of long duration, with short periods of restoration of voice.
4. A child recovered from osteomyelitis of the superior maxilla, so-called "empyema of the antrum in infants."
5. A woman with papillomata of the nose. These are growing from the region of the middle meatus, and like similar growths in the larynx they have a great tendency to recur.
6. Two cases, a woman and a girl, with congenital closure of the posterior nares. Both have been operated on, but the difficulty of keeping the openings patent was emphasised.
7. Three very interesting cases of dermoids of the anterior border of the nose.

DR. ALBERT A. GRAY gave a lantern demonstration tracing "The Evolution of the Round Window and Aqueduct of the Cochlea from Reptiles to Birds and Mammals." The varying size of the aqueduct of the cochlea and the relation of the round window to the cochlea and to the aqueduct at different stages of evolution was clearly shown.

Dr. Gray also gave a microscopic demonstration of the changes in the labyrinth found in cases of otosclerosis and deaf-mutism. He described, too, a nerve ganglion in the human temporal bone which he had discovered, and which had been hitherto unrecognised, showing microscopic preparations. He also showed patients operated on for aural suppuration with intracranial complications, and a boy with congenital absence of the cartilage of the auricle on either side.

DR. J. R. DREVER showed two patients with chronic œdema of the face. In both there was purulent nasal discharge. From this an autogenous vaccine had been prepared, and in both the use of this has been followed by beneficial results to the facial as well as to the nasal condition.

DR. J. L. HOWIE showed a case of congenital defect of the external ear.

DR. WALKER DOWNIE showed a case of carcinoma of the nose. He also showed a specimen of epithelioma of the auricle, and a man on whom Mr. Dalziel had performed an extensive operation for malignant disease of the tongue, tonsil, pharynx, and palate, with glandular involvement.

DR. J. G. CONNAL showed a woman on whom he had operated for aural suppuration with labyrinthine symptoms. The radical mastoid operation was performed, and a fistula of the external semicircular canal was found. No pus came from the fistula and no granulations were present in the neighbourhood. Dr. Connal did not, therefore, open the labyrinth. The woman recovered. An interesting discussion took place in reference to the indications for labyrinthotomy in middle-ear suppuration. There is still a good deal of diversity of opinion on this subject.

Dr. Connal also showed a man in whom was exemplified the difficulty which sometimes arises in deciding whether a laryngeal lesion is malignant, syphilitic, or tubercular. In this case one cord was dark red and swollen and restricted in movement. As the condition is improving under anti-syphilitic treatment opinion inclined towards syphilis.

DR. JAMES ADAM showed a case of superficial ulceration of the pharynx, palate, and larynx. At first sight it appeared undoubtedly syphilitic, but it has remained stationary for over two years despite anti-syphilitic treatment. Wassermann reaction is doubtful. Pneumococcal infection, tubercle, syphilis, and pemphigis, were opinions offered as to its nature.

DR. W. S. SYME reported at some length a case of otogenous temporo-sphenoidal abscess in which the abscess capsule, a very thick one, had been removed by operation during life. The abscess had evidently been present for some considerable time, and only gave rise to symptoms after the youth had received a blow on the head. The abscess was opened and drained, and two days later he became comatose. The drainage-tube was removed and the opening in the dura enlarged. A necrotic mass presented, and on removal was found to be the capsule of the abscess. The patient did well for six weeks and the abscess cavity filled up, but he ultimately died with a second abscess in the frontal region.

Dr. Syme also showed a man, aged 72, with malignant disease of the left side of the larynx, and a girl with submucous cleft palate.

The members and guests, to the number of 36, afterwards dined together. Among the guests were Sir St. Clair Thomson, President of the Laryngological Section of the International Medical Congress, London, 1913; Dr. D. R. Paterson, of Cardiff, President-elect of the Laryngological Section of the Royal Society of Medicine; and Dr. Dan. M'Kenzie, editor of the *Journal of Laryngology*, &c.

It was decided to hold the next meeting in the Royal Infirmary, Edinburgh, in November, under the chairmanship of Dr. J. D. Lithgow.

REVIEWS.

Studies in Clinical Medicine. By C. O. HAWTHORNE, M.D. London: John Bale, Sons, & Danielsson, Limited. 1912.

THE name of Dr. C. O. Hawthorne is familiar to many generations of the medical students of Glasgow. Some of us remember him as a fellow-student, more of us as a teacher, and the most fortunate, because the youngest of us, have feared him as an examiner. In whatever capacity we have listened to him, whether demonstrating a case at the bedside or unfolding a theory at a meeting of the Medico-Chirurgical Society, we have admired the lucidity of his exposition and the cogency of his argument. It is, therefore, with no surprise, but rather with a sense of meeting an old friend, that we encounter these qualities in the present volume of *Studies.* The range of these studies is wide; they have been written at different periods; many of them, among which we recognise some that have been delivered as papers to Glasgow Societies, have been published in one or other of the medical journals; and they include a number of clinical lectures upon cases of varied interest. Though the material is thus not altogether new, it affords us, for that very reason, a better conception of the extent of Dr. Hawthorne's activities; and none of the articles has been left without revision. Of the papers, some forty in all, nine deal in one form or another with a subject which for the author has always had a special interest—the relation of ocular symptoms to general disease; and seven have reference to the various manifestations of rheumatism and rheumatoid arthritis. The rest embrace subjects so diverse as the occurrence of cerebral thrombosis in anæmia, the apparent contradiction in the results given by the sphygmograph and the sphygmomanometer, enlargement of the spleen in cancer of the liver, drug idiosyncrasies, the diagnosis of pernicious anæmia, and secondary inflammations of the serous membranes in chronic renal disease. Whatever the subject, we are struck by the thoroughness of the author's observations, the clarity of his handling, the logic of his deductions, and the soundness of his clinical instinct. We may not in every case assent unreservedly to his conclusions, but it would be a poor physician who was so timorous that he never laid himself open to opposition; and whether we assent or not, his papers are always a stimulus to thought.

The volume can be cordially recommended to all alumni of the Glasgow School of Medicine. Many will doubtless buy it for its author's sake, but they will find that it is to be valued for its own.

A Text-Book of Pathology for Students of Medicine. By J. G. Adami, M.D., F.R.S., and John M'Crae, M.D., M.R.C.P. London: Macmillan & Co. 1912.

The present volume, while similar in its arrangement to Professor Adami's larger *Principles of Pathology*, is in no sense a mere abbreviation of that work. Its authors, as they state in their preface, have endeavoured not to epitomise the whole but to dwell upon what is most important. Their aim has been "to make clear and intelligible what is known concerning the deeper meaning of morbid states," and they "have not hesitated to sacrifice lists of data and their names." Thus while the general part remains similar in construction to its archetype in the *Principles*, the special part has been written afresh with little reference to the earlier volume.

It is, nevertheless, to the general part that one looks for the authors' attitude to the great problems of pathology. They divide it into five sections. The first chapter, which deals with the cells and tissues, discusses the physiology and chemistry of the cells, devoting some space to a consideration of enzyme action; sets forth the processes of growth and multiplication, cell differentiation and fertilisation; and closes with an interesting exposition of inheritance and the phenomena of Mendelism. In the second chapter are considered the causes of disease, and here, after a brief notice of inherited and intra-uterine disease, we find a section devoted to teratology, in which the "growing-point" theory of the causation of double monsters is adopted. The chapter then passes to the post-natal acquirement of disease, dividing its causes into mechanical, physical, chemical, and parasitic. Under the heading of chemical causes are included all the forms of intoxication, whether exogenous or endogenous, and the chemical and parasitic divisions thus overlap. The bacterial intoxications are regarded as exogenous, and the only true endogenous intoxications are therefore those which depend upon perversions of internal secretion, causing such diseases as cretinism and acromegaly, and those which depend upon autolysis and impaired metabolism. The chapter ends with a section upon predisposition and susceptibility. The morbid and reactive processes proper form the subject of the next chapter, and among these are included inflammation, infection, immunity, the phenomena of syncope and shock and pain. The discussion of inflammation is extraordinarily clear and simple, and it conveys a picture of the process which, while it may perhaps be too much methodised, enables us to recognise the essential uniformity underlying its multifarious aspects. Under the heading of the infective granulomata, the attitude of the authors towards tuberculosis approaches that of the school of Poncet and Leriche. The grey tubercle is not an essential feature; its formation is due to a conservative process; and tuberculosis is in its essence purely inflammatory. The "epithelioid" cells of the tubercle are really endothelial cells or the proliferated cells of the part. Their definition of fever—"fever is the process of adaptation to such toxic agencies as can be neutralised by the development of antibodies"—is so compressed that it almost conceals its truth. Their theory of immunity, of which subject they give an admirably intelligible account, is essentially that of Ehrlich, but differs from it in the manner in which they conceive of the attachment of the toxin to the biophoric molecule. The brief section on pain is full of suggestive observation.

The progressive tissue changes are the subject of the fourth chapter. These include overgrowth (hypertrophy and hyperplasia), regeneration, metaplasia, and tumour formation, the central feature of the chapter being, of course, the discussion of tumours. Of the making of many classifications of tumours there is no end, and we are by no means certain that the classification adopted by Drs. Adami and M'Crae will prove more permanent than its predecessors; but at least it is based upon a definite embryological differentiation. They divide tumours first into heterochthonous and autochthonous, those, that is, which arise from cells belonging to another individual (the teratomata), and those which arise from cells proper to the subject's own body. The autochthonous tumours are again divided into hylic and lepidic, terms which require a brief explanation. The tissues of the embryo may be divided into lining membranes and "pulps," and each of these may be derived from epiblast, mesoblast, or hypoblast, the old idea that only connective tissues are formed from mesoblast being thus superseded. From lining membranes are derived those adult tissues of which the cells are in direct apposition, and these are spoken of as lepidic tissues: from pulps originate tissues of which the cells are separated by an intercellular matrix, and these are the hylic tissues. From these tissues arise respectively lepidomata and hylomata. The authors do not suggest that these terms are for ordinary purposes to replace those in everyday use, which they still retain; but they urge them as necessary to express their conception of tumour relationship, and certainly they help to clear up, for example, the relationship of the leukæmias to tumour forms.

The last chapter of the general part treats of the regressive tissue changes—atrophies, degenerations, calcification and calculi, pigmentation and necroses.

Space is lacking to deal with the special part, which maintains the interest elicited by its precursor, and affords, in spite of the authors' disclaimer, a very comprehensive view of the morbid processes affecting individual organs. But enough has been said to show that the volume abounds in points of interest, and that while it fulfils all the purposes of a textbook, it is no mere repetition of accepted views, but a fresh presentation of the subject as it appeals to original minds. A word of praise is due in closing to the excellence of the illustrations.

Mind and its Disorders. By W. H. B. Stoddart, M.D. F.R.C.P. Second Edition. London: H. K. Lewis. 1912.

It is little more than three years since the first edition of this work was published. Extensive alterations have been necessary in the psychological sections, including the addition of two chapters on the subconscious; and the section dealing with mental diseases has been re-arranged so as to emphasise the similarity of the toxic psychoses.

There are three sections. The first dealing with normal psychology, the second with the psychology of the insane, and the third with mental diseases—the last including chapters on diseases to which the insane are especially liable, general treatment, case-taking, feigned insanity, and insanity and the law.

There are two appendices, one giving a short account of some methods of staining the nervous system—too short, perhaps, to be of much value—and one on examination of the cerebro-spinal fluid.

The psychological sections are unusually full and should prove helpful to the student. In the section on mental diseases, treatment receives full consideration: and this, coming as it does from one with so large an experience, is a valuable feature. The morbid anatomy of mental diseases is briefly described in connection with the disease under consideration. Perhaps a chapter or section devoted to this subject would have simplified it for the student.

Lectures on Clinical Psychiatry. By PROFESSOR KRAEPELIN. Revised and edited by THOMAS JOHNSTONE, M.D., M.R.C.P. London: Baillière, Tindall & Cox. 1913.

THIS is the third English edition of the authorised translation from the second German edition—the second edition having appeared in 1905. The subject is presented in a most attractive way as a series of clinical lectures, special attention being paid to differential diagnosis. The editor has provided a classification of mental diseases in which he has placed together the subdivisions of each disease and the number of the lecture that deals with it; in this way continuous study of any one mental disorder is made easy. The classification is in accordance with Professor Kraepelin's teaching, and the nomenclature differs from that in use in this country. The only new features of this edition are the presence of several appendices and of a chapter on the sero-diagnosis of general paralysis, by means of which the editor brings the matter up to date. The translation is remarkably good, and it is only rarely that one meets with a mode of expression that is unusual in English.

Building a Profitable Practice: A Text-Book on Medical Economics. By T. F. REILLY, M.D. Philadelphia and London: J. B. Lippincott Company. 1912.

EVERY practising physician and surgeon is aware that many points in every-day work are not dealt with in any part of the medical curriculum proper, and undoubtedly the first few years of professional work present many problems which must be solved as they arise. For this reason the book under review must be of value to young practitioners, and while primarily addressed to American practitioners the crystalline verities it contains are of equal value to medical men in this country. No doubt some of the statements and advice of the author require more or less modification for home consumption, as on this side of the Atlantic we are still old-fashioned enough to consider that the objects of the medical profession are not entirely covered by the results measured solely in coin of the realm. If all the profession were to be rewarded simply in ratio to their capabilities and usefulness to society there might be an astonishing redistribution of the *lares and penates* of the profession. No one who has read "Beside the Bonnie Brier Bush" can have failed to be struck by this fact. Many of the very best men of our profession in every respect are occupying humble posts in which their good and honest work is known only to a privileged few. On the other hand, many of our most brilliant *confrères* find uncongenial employment in keeping body and soul together by what is to them the narrowing routine of country or club practice. One's professional future is so often settled by purely adventitious or accidental circumstances that it is no surprise when we find many instances of the "round peg in the square hole."

It will be already evident that the book is meant for the man who is about to enter upon his professional work in ordinary general practice, and its value is confined to this section of the profession: nevertheless many of its pages will be read with interest by older men, and even by those whose life work is to all intents and purposes over. Not all the advice given will be found correct according to our standards of professional morality; but it must be kept in mind that conditions in America probably call for different methods in certain details from those which would be accepted as sound here. The lengthy quotation in the Introduction from Walsh —"Old-Time Makers of Medicine"—is sufficient example of the point referred to. For example, the statement here that the physician should, after seating himself near the sick man, "accept the drink which is offered him," is foreign to our present notions; indeed, such custom has practically, and perhaps properly, fallen into desuetude.

The author's advice to the newly-fledged doctor to secure a hospital appointment, if at all possible, is of course good; but he fails to point out that more than a year or so of this work is almost a disadvantage in general practice, as the methods of the hospital are not those of private practice. The author's remarks on page 6 *re* resident medical officers of hospitals and the nursing staff are sound and well put.

The chapter on post-graduate study is excellent: this is a feature which the Americans value properly, and it is a pity that in our own country post-graduate work does not receive the recognition to which it is entitled. After all, of course, we must not blink the fact that in Scotland generally the opportunities of securing post-graduate instruction are few, simply because of the difficulty which men experience in finding the time and money. The mere cost of the post-graduate class is in most cases only a trifle compared with the loss attendant upon the necessary absence from professional duties. In this chapter the author shows some want of knowledge of local conditions. It is, of course, quite incorrect to state that in Glasgow the control of post-graduate work is vested in the Glasgow Royal Infirmary.

The chapter on selection of location for practice does not help much, as the conditions in America are clearly somewhat different from those here, although many of the fundamental facts are common to both countries.

Service in the army and navy receives a chapter to itself, and in general the conditions are comparable with those in similar service here.

The chapter on buying a practice and on partnerships ought to be most helpful, but it is just here where Dr. Reilly fails; and the most important chapter in the whole book, from many points of view, gets ridiculously scant treatment in two and a half pages. On the other hand, Chapter X, on the actual reception and examination of a patient in the "office," the American equivalent of our consulting room, is full of the most pertinent and valuable advice, and this chapter should be studied most carefully by all beginning actual practice. It must never be forgotten that the first patients under these circumstances are really very serious cases from the point of view of the doctor's professional future, and on his manners and methods very much may depend. The same remarks apply to the following chapter, which deals with the doctor's conduct when requested to visit a patient at the latter's own home. The author very truly says that "the proper entrance into a sick room is a fine art," and that "some men have achieved a great part of their reputation by this act alone." How true this is! Even then it has to be admitted that what may prove desirable in one case will be very disadvantageous in another, and in the solution of this problem lies genius itself. The notes on "when to repeat calls" and on "the management of the dying patient" are pregnant with value to the young practitioner.

The long chapter on "medical finance," though naturally very interesting, differs so much in many details from the customs in this country that its value is only relative. Much the same may be said of the chapter on "the collection of fees."

The chapter on "professional ethics" is indeed an extremely valuable one, and should have been printed throughout in *italics*. It is precisely in this respect that the beginner is most likely to commit, unintentionally, many a serious *faux pas*.

The chapters on prognosis, diagnosis, errors in practice, obstetric cases and abortions, are all helpful in pointing out what should be done, and the many possible pitfalls. In the same way the chapters on personal manners and personal appearance may be confidently recommended to all. The short chapter on "marriage" may also be recommended for careful perusal, although here the temporary insanity of love is bound to upset all the good resolutions ever made.

In the short chapter on "don'ts in practice" will be found much good advice. In "answers to patients" the author perhaps goes too far in his advice to "have an answer ready for every problem that the layman puts to you. Don't hem and haw. Be positive in all your answers." In this chapter, in the last paragraph on page 286, sound advice is given in the trying case where a young doctor is asked by a medical colleague to call on a patient of the latter.

If care is taken throughout to consider the economic, social, and other differences between the old world and the new, Dr. Reilly's book should prove of the very greatest value to every young man embarking on the stormy sea of general practice.

The Medical Annual: A Year-Book of Treatment and Practitioners' Index, 1912. Thirtieth Year. Bristol: John Wright & Sons, Limited.

THIS, the thirtieth year of the *Medical Annual*, is quite up to the level of former years. The conciseness of the book, and the ease one has in finding information, form the most commendable features of the work. In going carefully over the book we can confidently state that nothing of any importance has been excluded from this year's *Annual*.

One sometimes wonders what would be the feeling in the profession if, for some reason, the *Annual* did not make its appearance. Many practitioners would certainly feel the want of it, and would find their general outlook on medicine, particularly with regard to new developments, somewhat chaotic.

We have the greatest pleasure in recommending the *Annual* to all who wish to march with the times.

E. Merck's Annual Report. Volume XXV. Darmstadt: E. Merck. 1912.

THIS volume, as usual, deals with the newer drugs and the newer knowledge of drugs brought forward during the year dealt with (1911). As on former occasions, the contents include other preparations besides those of Merck, and the book forms a useful work of reference. At the beginning there are two very full articles on the glycero-phosphates and on the digitalis glucosides and allied drugs. They deal with the historical, chemical, and medical aspects of these subjects, and will be found very useful and interesting.

Following these articles we have monographs on separate drugs, under headings arranged alphabetically, so that the book yields information on a drug with a minimum of trouble in finding it. There are a general index, an index of diseases, symptoms, and indications for treatment, an index of authors, and a bibliographical index. It is a most useful compilation. The articles are, as a rule, brief and to the point, and show clearly the enormous amount of work that is being done in the therapeutic and pharmacological investigation of drugs at the present time.

Medical Laboratory Methods and Tests. By HERBERT FRENCH, M.A., M.D.Oxon., F.R.C.P.Lond. Third Edition. London: Baillière, Tindall & Cox. 1912.

THE fact that this little volume has reached its third edition is conclusive proof that its merits have been recognised. Its place is in the laboratory, and it describes clearly all the more common chemical, microscopical, and bacteriological tests that can be applied by the general practitioner.

The author confines himself to tests that are applicable to tissues or fluids obtained from patients. There are eleven chapters in the book, which in succession treat of the examination of urine, sputum, blood, gastric contents, fæces, &c.

The coloured plates are very good, showing pictures of normal and abnormal red corpuscles and leucocytes, with certain parasites, such as those of malaria and the spirilla of relapsing fever. The second plate shows the tubercle bacillus, diphtheria bacillus, and various forms of staphylococci. The other illustrations (uncoloured) are also of a high order. There is a good index, the type is clear, and altogether the volume achieves what is the author's intention—a handy little book full of most that is necessary for laboratory work.

The volume can be highly recommended to the general practitioner.

The Prognosis and Treatment of Diseases of the Heart. By R. O. Moon, M.D., F.R.C.P. London: Longmans, Green & Co. 1912.

The little volume now before us is a reflection of the prevailing tendency to make much of the part played by the myocardium in diseases of the heart, and to belittle the significance of valvular affections. In the first edition of Mackenzie's classical work on *Diseases of the Heart* only fifteen pages out of three hundred and sixty were devoted to valvular defects; and in Dr. Moon's book, although the disproportion is not so obvious, the same tendency is evident. The current writings, on the English side of the border at least, are now so exclusively occupied with the iteration of the word "myocardium," that those of us who have known the teaching of Gairdner, and have realised for the last twenty years and more that the heart is a muscle, may be permitted to wonder whether it required the electro-cardiograph to bring that elementary conception home to the Sassenach intelligence. We are far from decrying the admirable work which has resulted from the use of the polygraph and the electro-cardiograph, or denying the wide extension which they have brought to our knowledge of the heart; but there seems to be a danger lest the attention concentrated on the vital activity of the myocardium may cause an undue neglect of the necessary mechanical consequences of valvular disease. Of this danger Dr. Moon's volume is an example. What he writes on the myocardial diseases, though he sometimes suffers from a tendency to "hedge," is for the most part judicious and accurate; but his observations upon valvular affections are perfunctory and loose. He states, for example, of aortic regurgitation, that it "is nearly always accompanied with great hypertrophy of the left ventricle," forgetting the large class of cases that begin towards middle life in which hypertrophy is not great. He says that in its treatment "anything in the nature of football (except as a behind), . . . must be ruled out of court." If a "behind" means, as we suppose, a half-back or three-quarter-back, the position is one of the most arduous upon the field. He calls Broadbent's insistence upon the absence of the second aortic sound as a prognostic indication a "small and meticulous point:" it is open to question whether it is more small and meticulous than the alterations in an electro-cardiographic tracing, which not one in a hundred practitioners has an opportunity of observing for himself. "I have noticed," he says, "that mitral regurgitation due to chorea, when fully established, is more intractable to treatment than when it is due to rheumatic fever. . . . On the other hand, there are . . . many instances in which the signs . . . eventually disappear—that is, the lesion does not become fully established." The inconsistency is explained when we find that his main criterion for the existence of mitral regurgitation is a systolic murmur at the apex.

We have dwelt upon these defects because we deprecate the one-sidedness of modern cardiology: progress is not made by throwing over the good along with the bad of the older faith. But it is only fair to Dr. Moon to say that his volume presents in other respects a compact summary of the essentials of cardiac prognosis and treatment.

A Manual of Clinical Chemistry, Microscopy, and Bacteriology. By Dr. M. Klopstock and Dr. A. Kowarsky. Translated from the last German Edition. London: Rebman, Limited.

This volume has undergone very considerable enlargement since it first appeared in English dress seven years ago, and it now forms a handbook of the main applications of the three sciences of chemistry, bacteriology, and microscopy to clinical medicine. While the more elaborate methods of the laboratory are thus omitted from its purview, much is included which demands an equipment more extensive than that possessed by the average general practitioner, and, perhaps, hardly sufficient care has been taken to indicate that in complicated processes like the Wassermann reaction experience is as necessary as reagents. It would also have been advantageous, for the purposes of the English reader, had the anonymous translator added, where these are lacking, references to English methods and to English work. These minor flaws apart, however, the manual of Drs. Klopstock and Kowarsky will be found a trustworthy guide to modern methods of examination. The translation, but for occasional Germanisms, is on the whole well done, and the illustrations are sufficient, and for the most part satisfactory, but the book would gain by the addition of a more exhaustive index.

Vaccine Therapy: Its Theory and Practice. By R. W. Allen, M.D., B.S. Fourth Edition. London: H. K. Lewis. 1912.

The steady increase in size of Dr. Allen's well-known manual in its successive editions is to some degree an index of the spread of vaccine therapy over an increasing range of diseases. The extent of its territory is now so great that in the present edition the author has altered the plan of his book, so as to make of it "a systematic account of the applications of vaccine treatment to the bacterial diseases of the various parts of the body." The volume opens with a consideration of the various factors in immunity, followed by a more elaborate discussion of the opsonins, and of the value of the opsonic index in diagnosis and prognosis, and in treatment, in which, like the majority of observers, Dr. Allen no longer regards it as indispensable. Then follow chapters devoted to the preparation of the vaccine and to the *rationale* of vaccine treatment. The rest of the book takes up one by one the systems of the body, and discusses the diseases of each to which vaccine treatment is appropriate. Into this list, however, the nervous system does not enter, save in so far as meningitis, either cerebro-spinal or tuberculous, is concerned; and these are mentioned rather for the sake of completeness than for the brilliancy of the results.

The most striking feature of the evidence presented in favour of vaccines is its contradiction of the theoretical view that they are more applicable to chronic than to acute cases, and that in the latter they are even contra-indicated. To take a few instances at random, the results already obtained in enteric fever, acute rheumatism, pneumonia, and septicæmia should be sufficient to give pause to the theorist, and to call for a reconsideration of his conclusions. It is, of course, evident that in most, if not in all, of these instances the recorded cases are as yet far too few to permit of a final decision on the merits of the treatment, and something presumably has to be allowed for the possible over-statement of enthusiasm; but there is undeniably a gradually accumulating body of evidence to show that vaccines do modify the course of acute bacterial diseases, and modify it in a favourable direction.

It will be apparent that in making the whole body the field for his discussion, Dr. Allen cannot have personal experience of all the diseases of which he treats. In dealing with those which are unfamiliar to him, however, he gives full references and summaries of the more important papers, and the reader is put in possession of material on which to form his own conclusions. The present edition of *Vaccine Therapy* is an indispensable part of the vaccine therapist's equipment.

Lessons in Elementary Sanitation and Hygiene, with Special Reference to the Tropics. By W. T. PROUT, M.B. Third Edition. London: J. & A. Churchill. 1913.

THIS is undoubtedly one of the most useful little books on the subject, and alike in printing, illustrations, and general arrangement can hardly be over-praised.

Naturally, with less than 200 pages, the scope is limited, but the author has made the very utmost of the space at his disposal, with the result that we have an excellent primer on the subject.

With considerable tropical experience there is just the proper "leaven" to make the book specially suitable for the conditions peculiar to the tropics, and naturally some of the chapters are of quite a different type to those of the usual English text-books.

The general arrangement is into fourteen lessons, which cover all the important branches which call for treatment in a small book of this nature.

The introductory chapter on health and disease is worthy of special notice and will amply repay most careful perusal. This is a part which is too often taken for granted in the more ambitious text-books on the subject.

Lessons II and III deal with the structure of the human body, and in spite of the necessary abridgement the author hardly omits a single important fact.

Lesson IV, on the germ cause of disease, is an admirable introduction to the following chapter on special disease germs; and in the former there is a succinct note on immunity which is most clearly put. The association of flies and rats with various infectious diseases is pointed out; while in Lesson VI the part played by the mosquito in malarial disease is carefully gone into. A whole lesson is devoted to the treatment and prevention of malaria, with notes on intestinal parasites.

Lesson IX deals with the digestive system; and some knowledge of this is specially important to those living in tropical climates.

Lessons X and XI, on food and water respectively, are also of the very utmost importauce, especially the latter, as the question of water supply is always a more difficult problem to solve in sparsely populated tropical regions, and indeed in temperate climes as well. Some easily adopted methods for the purification of water on a small scale are given.

Lesson XII deals with air and respiration, with notes on ventilation.

Lessons XIII and XIV, dealing with the dwelling and clothing respectively, are short but admirably put.

The illustrations are numerous and on a relatively large scale—a most important point in a book of this kind. They are also carefully selected.

In future editions an index ought to be added, as this would add considerably to the value of the work.

Hygiene for Health Visitors, School Nurses, and Social Workers. By C. W. HUTT, B.C., D.P.H. London: P. S. King & Son. 1912.

THE greater part of this book is taken up with a *résumé* of the subjects of physiology, food, water, ventilation, drainage, &c. No doubt these sections may prove valuable to some of the workers indicated in the title. The illustrations here, though nearly all old, are helpful, but the descriptive matter is at parts—*e.g.*, development of bone—too technical, while at others it shows the absence of careful revision, as on p. 4, where the singular number is employed in describing the red cells and the plural for the leucocytes. Similarly, on p. 8, line 5 from bottom, the word "by" should be "with." The parts dealing with the organs of special sense, also with the teeth, are excellent; and the same may be said of the chapter on food, although it seems curious that no mention is made of cooking by means of electricity. On p. 71 the word "roughly" is used redundantly.

In discussing clothing materials the author disposes of linen by the statement that it "has much the same properties as cotton, but is less durable and more expensive." This statement is only partly true, and linen deserves a much more detailed notice than this with regard to its use for clothing material.

The chapter on personal hygiene is free from objection, and is fairly ample in its treatment.

In the chapter on water a number of illustrations appear to which no reference is made in the text, a somewhat serious objection when the class of the average reader is considered.

Dealing with ventilation, warming, and lighting, it is stated (p. 114) that it has been found that 0·6 parts per 1,000 of carbon dioxide in the air of a room renders the air too foul to breathe without danger to health; but it is not pointed out that the actual percentage of CO_2 has little to do with the result *per se*, as it is well known that the air may contain large proportions of CO_2 and yet be quite suitable for respiration otherwise. In this section, also, there is no mention of the ozonising of air, and the paragraph at the top of p. 129 is misleading in this connection. In dealing with closed stoves the author says (p. 134) that they form carbon monoxide, especially if the stove is made of cast-iron. This is rather misleading, as the real danger is not that the gas is formed, but that it does not escape in the flue but passes through the cast-iron if the latter be at a fairly high temperature.

Under disposal of refuse the author recommends that domestic refuse should be removed at least twice a week in winter and oftener in summer. No fault can be found with the suggestion for summer, and it might be an advantage to public health if the author's suggestions could be brought under the notice of the Medical Officer of Health with whom Dr. Hutt is associated.

The chapters dealing with general arrangement and construction of school buildings, care of infants and young children, ailments of school children, prevention of disease, elements of home nursing, and first-aid treatment of injuries, are all admirable, and are worthy of separate publication apart from the earlier parts of the book.

The concluding chapters are on the duties of health visitors and school nurses, supervision of domestic arrangements, institutions of use to health visitors, useful sanitary knowledge, and two pages on vital statistics.

There are a number of most useful appendices, among which appendix "E," on quack medicines, is noteworthy and of more than usual value in a book of this kind.

Studies in Small-pox and Vaccination. By WILLIAM HANNA, M.A., M.D., D.P.H. Bristol: John Wright & Sons, Limited. 1913.

THE appearance of this book is to be welcomed for two good reasons. In the first place (at a time when vaccination is being to a great extent neglected and the "conscientious objector" carries the day in the face of the law), there is rapidly accumulating a mass of unprotected persons, who will form excellent pabulum for a small-pox epidemic, and at the same time constitute a great source of danger to the general community; and, in the second place, the book is to be welcomed because it is a piece of good work, and places the facts of the case before the reader in a plain and unmistakable manner.

It is humiliating to recognise that in this country, where vaccination originated, the value of the practice requires to be defended and advocated at this time of day. But the growing antagonism to, and neglect of, this valuable means of protection makes it necessary that the public mind should be kept alive to the dangers which lie ahead; and Dr. Hanna's book is well calculated to serve this purpose.

It is unnecessary to review a work like this in detail, but the gist of the matter is contained in the conclusions to be found at the end of the volume, and they are so important and so well stated that we feel justified in giving them *in extenso*:—

"(*a*) That the case-mortality in the natural disease, *i.e.*, in the unvaccinated, which ranges from approximately 25 to

40 per cent, has been reduced by the power of vaccination to about 3 per cent in those who have been well vaccinated.

"(*b*) That in the unvaccinated, persons at the extremes of life, mainly children under 10 years of age and old people, are those who suffer most, the case-mortality reaching as high as 50 per cent. In the previously vaccinated, no cases are recorded occurring under 3 years of age: under 20 years of age no deaths are recorded, but as age advances the vaccination gradually loses its protective and modifying power.

"(*c*) That even when, owing to age, and consequent gradual loss of vaccinal immunity, vaccination is unable to stop the development of the disease, it may modify the extent and character of the eruption to such a degree as to make it so exceedingly mild that in many instances the disease may be undetected.

"(*d*) That the scar-area of vaccination has an important bearing on the severity of the disease; the larger the area the milder the character of the disease.

"(*e*) That the vaccination scar-area gets larger as age advances until the 20-30 years age period is reached: it then gradually becomes smaller, in all probability owing to atrophy and the scar tissues.

"(*f*) That vaccination performed subsequently to infection with small-pox and up to the date of onset of symptoms will "take" and pass through its typical course.

"(*g*) That protection is afforded against small-pox by vaccination, when performed within three days after infection; but this may not be absolute in cases vaccinated for the first time; the course of the disease, however, will be exceedingly mild.

"(*h*) That there is abundant evidence of the value of vaccination in mitigating the severity of the disease when performed at any time after infection up to date of onset, and even afterwards."

We have in this volume a lucid and concise statement of the facts in favour of vaccination based on cases which have been carefully observed and recorded. To any reasonable mind these facts must convey a conviction of the value of vaccination. They afford a complete answer to the foolish and dangerous talk of the anti-vaccinationists. Dr. Hanna's book will be appreciated by the medical profession: it should also be in the hands of the clergy and schoolmasters, and others who have a good opportunity for influencing public opinion. It only remains to say that the volume is furnished with excellent tables and charts, and illustrated by good plates, which readily convey to the eye concepts of the information contained in the detailed descriptions of the letterpress.

Dr. Hanna is to be congratulated on his book.

Achondroplasia: Its Nature and its Cause. By Dr. Murk Jansen, Lecturer on Orthopædic Surgery, University of Leiden, Holland. London: Baillière, Tindall & Cox. 1912.

The sub-title of this monograph—"A study of the stunting of growth in embryonic cell-groups caused by amnion pressure in the different stages of the development of the skeleton"—indicates the author's line of thought.

The work is in two main divisions in which are studied the *nature* of achondroplasia, chiefly clinical, and its *cause*, lying in the province of teratology.

By "achondroplasia" Dr. Jansen means an affection characterised by a congenital shortness of the extremities and of the base of the skull. These "dwarf phenomena" are described at some length. The size of the vertebral bodies gradually diminishes from the neck to the sacrum, and this raises the question as to the check in growth of the dwarfed parts being determined by their distance from the head. If this were so, then the lower limbs would be retarded in growth to a greater degree than the arms; but, as the author points out, "the humerus and femur are checked in an almost equal degree," so that position *quoad* the head does not determine the degree of retardation. Rather is the retardation of growth of the various parts determined by the time of their primary formation. But time of formation is not the only factor; bones produced in membrane escape the stunting in growth, except in very serious cases. The columns of cartilage cells in the developing cartilage bones are, in the achondroplastic, shorter than in the normal subject, and less regularly arranged in the long axis of the bone. Contrasted with the dwarf symptoms is the condition of the sexual organs. Not only may these be excessively developed, but the sexual appetite may be enhanced.

Passing on to "mechanical malformations," the author pays a good deal of attention to the backward displacement and tilting of the hard palate. He considers that this "narrowing of the choanæ" is of mechanical origin, and has hitherto passed unnoticed. The other malformation is a dorso-lumbar kyphosis.

The symptoms of dwarf-growth are very obvious. The mechanical malformations are less conspicuous; but Dr. Jansen considers that they help in tracing the *cause* of achondroplasia.

In the section dealing with causation, the possibility of amnion pressure as a factor is considered, and the author gradually works out the probability, if not the actual certainty, of its being the cause of the phenomena of achondroplasia.

The concluding section of the work deals with non-characteristic symptoms of achondroplasia, such as micrognathy, hare-lip, hydrocephalus, heightened sexual activity, &c.

After a perusal of Dr. Jansen's work, we cordially agree with the opinion of Professor Elliot Smith, expressed in his "Introduction," that "whether or not future research confirms his plausible hypothesis, this book will have a permanent value as a brilliant example of lucid biological reasoning," and will be the means of stimulating research.

We recommend the volume to all who are interested in teratological problems.

Clinical Pathology. By P. N. Panton, M.A., M.B., B.C.Cantab. With 13 Plates (11 Coloured) and 45 Illustrations in the Text. London: J. & A. Churchill. 1913.

We have pleasure in calling the attention of our readers to this new manual for the clinical laboratory. It is intermediate in size between the small volumes on the subject and the very large treatises, which are perhaps better suited for guiding in their researches investigators who are already experts. It is this intermediate position at which the author aimed, and it appears to us that he has done what he proposed to do in a truly creditable manner. The limitation in the size of the work has been attained in great measure by confining the description of methods to one, or, at most, two methods for each object.

The text consists of eight sections, in which are included 29 chapters. The first section deals with the blood in health and disease, and, in addition to other matters, discusses agglutinins and opsonins, complement fixation tests, and parasitology. Section 2 is devoted to bacteriology, and includes a classification table, bacteriological methods, vaccines, anti-sera, culture media and staining reagents. Section 3 treats of puncture fluids; section 4 of the urine, including the bacteriology of the urino-genital tract; section 5 of the alimentary system; section 6 of the eye and skin; and section 7 of the respiratory tract, including the nose and the sputum. The concluding section is on the subject of histology, including tumours and histological methods. The book is, of course, furnished with an index.

The plates, most of which are coloured, are beautifully reproduced. They illustrate the blood in health and in various diseases, blood parasites, absorption spectra, bacteria, cells of puncture fluids and urinary deposits.

The work strikes us as one which is likely to fulfil its purpose thoroughly, and the printers and publishers, as well as the author, are to be congratulated. Mistakes, of course, are bound to occur; but it is unfortunate that the word "guaiac" should be wrongly spelled both in the text and in the index. "Guaiacum" is also spelled wrongly in the text (p. 222). The mistake is of the usual variety.

Hypnotism and Self-Education. By A. M. HUTCHISON, M.D. The People's Books. London and Edinburgh: T. C. & E. C. Jack.

DR. HUTCHISON's little book constitutes an admirable introduction to this important subject, and should go far to remove much of the ignorance and prejudice that abound.

Study of Man, in connection with Establishing Laboratories to Investigate Criminal, Pauper, and Defective Classes. By ARTHUR MACDONALD. Washington, D.C.

"THE establishment of laboratories under City, Federal, and State control, and also under private endowment, for the study of the criminal, pauper, defective, and other abnormal classes, with a view to lessening these social evils by investigations of their causes," is advocated in this pamphlet of eleven pages. An excerpt of the Bill introduced to Congress is given; and the author quotes largely from his own published works.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

MEDICINE.

Secondary Pneumococcal Phlebitis in the Tuberculous. By M. Lafforgue (*Le Progrès Médical*, 3rd May, 1913).—The symptoms reported occurred in a patient, aged 22 years, who showed distinct signs of a local pulmonary tuberculosis at the right apex of some weeks' duration. At this time he was suddenly seized with a stitch in the left side, accompanied by headache and fever. This proved to be a pleurisy, from which about a litre of sero-fibrinous fluid was withdrawn. The pleural symptoms gradually disappeared, and there remained distinct signs of pulmonary tuberculosis. These consisted of a dulness in the sub-clavicular region and the right supraspinous fossa, with exaggerated fremitus and vocal resonance; expirations were prolonged and faintly tubular. Some crackling râles, increased by coughing, were heard in the intraclavicular region. In short, the signs were distinct, but in a case only slightly advanced. There was slight hæmoptysis, with cough, and a relatively abundant expectoration, which was out of proportion to the physical signs. The sputum was viscous, muco-purulent, and slightly blood-stained. The bacteriological examination of the sputum showed a few tubular bacilli, and in greater numbers a lanceolate diplococcus which resembled the pneumococcus. The fever ran to about 38° C., with a few remissions. The general condition of the patient was good. The other organs were healthy, except for a slight albuminuria.

Fifteen days after admission to hospital the patient felt, after movement, a sharp pain at the apex of Scarpa's triangle. This pain extended to the knee and calf of the leg. The limb was cold, tender, and slightly œdematous. A blood-culture was made, and a germ having all the characters of the pneumococcus was found. The course of this phlebitis was normal, and had completely subsided in three months.

If a bacteriological examination had not been made one would have said that this early phlebitis was tubercular in origin. It is well known that cases of this kind are few in number when compared with the great frequency of cachectic thrombosis which occur in the last stages of the disease.

Hirst has shown that phlebitis occurs in persons whose health is little altered, and in whom it is often the first sign of the tubercular infection. *A propos* of the late phlebitis, diverse pathological theories have been introduced. Some attribute it to an altered condition of the blood; others, after Vaquez, aver that cachectic thrombosis is caused by secondary infection. The most generally accepted theory is that the phlebitis is due to the tubercle bacillus itself. This has been proved by the anatomical researches of Weigert and the histo-bacteriological ones of Sabrazis and Mongour. Others, having found at the seat of the lesion and in the blood-clot from it bacilli other than the tubercle bacilli, have questioned whether the phlebitis said to be "tuberculous" was not really due to a secondary infection. It probably depends largely on the case; sometimes the Koch's bacillus is the cause and sometimes other germs. The case under discussion shows that the pneumococcus was perhaps one of these germs.

This question is more than one of mere speculative interest, as it is one of importance in prognosis. Thus a tuberculous patient who suddenly shows signs of a phlebitis may have a septic infection, which may give rise to a general dissemination if not treated at once. Probably there is an absolute and necessary parallelism between the aptitude of the germ and its mechanical dissemination in the blood-stream; thus, by clinical observation, Weigert has come to the conclusion that tuberculous infection of the veins is always followed by acute tuberculosis. Hirtz is rather against so black a prognosis. He says—"Certain patients have had amelioration of their symptoms with the subsidence of the phlegmasia. Two patients died—one a few weeks, the other some months after the phlebitis."

From a diagnostic point of view it is of some importance to find the cause of the phlebitis. If a blood culture shows the presence of an organism other than the tubercle bacillus, then the prognosis is more favourable. To this prognostic rule there is the exception when there is a symbiosis of the two germs in the lesion.

With J. Chalier and R. Crinnen, the writer thinks that "one is not authorised to consider the pneumococcus as an efficient agent of any metapneumococcic determination, inasmuch as the blood-culture would have been positive at the onset of the complication."

To get this result it is indispensable to use large quantities of blood. In the present case the blood-culture, negative with 5 c.c., became positive with 20 c.c. The reason for this is that pneumococcal septicæmia is extremely discrete, and is apt to be missed if only small quantities of blood are used. When the lesion has formed, that is to say when clinical signs first appear, it is possible that the dissemination of the pneumococcus in the general circulation has already taken place.

The author's case of pneumococcal phlebitis is the exception to the general rule, which states that this complication appears with convalescence from pneumonia. The pneumococcus is the causative agent of the phlebitis as in other cases it is the cause of endocarditis.—D. Ross Kilpatrick.

The Abdominal Crisis. By A. B. Kanavel, M.D. (*Illinois Medical Journal*, December, 1912).—The positive signs and symptoms are four in number. First, sudden excruciating pain in some part of the abdomen; second, nausea and vomiting, almost always the latter; third, rigidity of one or both sides of the abdominal wall; fourth, tenderness at least relatively localised. These must all be present for a positive diagnosis. Each must be investigated discriminately.

1. *Sudden abdominal pain.*—It is essential that the onset should be sudden and of considerable severity. The old term, "intestinal colic," describes its nature. Pains beginning mildly and increasing in severity slowly over several hours cannot be said to be typical.

2. *Nausea and vomiting.*—Either of these, but more typically the vomiting, should come on shortly after the onset of the pain. It is a distinct and positive sign. It is of short duration, ceasing after two or three hours.

3. *Rigidity of the abdominal wall.*—This is more or less localised. There is no sign that is of more importance than this. It is essential to understand that it is of two types, voluntary and involuntary, the first being produced by the patient of his own volition in an attempt to protect some part of the intra-abdominal region from the pain incident to pressure over that region. The second may be explained as due to irritation of the parietal peritoneum or the nerves supplying the wall, and, in contradistinction to the first, is always present whether the patient's attention is on it or not. It persists even up to the final stages of anæsthesia. The importance of this distinction is evident in that a non-parietal inflammation will present the former and not the latter. One is thus able in an individual lesion to prognosticate the

extent of the inflammation and the probability of recovery before operation. The lightest possible pressure should be used.

4. *Tenderness.*—If tenderness is localised it, of course, shows not only that one is dealing with an abdominal crisis, but also designates within narrow limits what lesion has caused it. Early, however, there is a relative localisation, *i.e.*, the upper part of the abdomen is more tender than the lower, or the right side than the left, or *vice versa.*

Of corroborative value is a slight rise of temperature and a pulse of over 110. Either may be absent early, however, since in the strangulations there may be no inflammation, and in the perforations there may be even subnormal temperatures. An early pulse of 130 to 140 is of great importance when present, as for instance in acute pancreatitis. The pulse is generally of more value than the temperature. The evident shock in which the patient may be found, and the early leukocytosis in the virulent inflammations may be of value. These signs will exclude, for instance, acute gastritis, enteritis, gastric crisis of tabes, passage of stone, bad colic, pyelitis, &c.; and on the other hand will include intestinal strangulations, perforations of gastric, duodenal, or gall bladder ulcerations, strangulated herniæ, appendicitis, acute pancreatitis, torsions of omentum or ovarian pedicle and other similar conditions. Some conditions may be difficult of diagnosis, such as passage of ureteral or biliary calculi, torsion of kidney pedicle, or rupture of tubal pregnancy. There may be other signs present which help towards diagnosis in these cases.—D. Ross Kilpatrick.

GYNÆCOLOGY AND OBSTETRICS.

Chronic Appendicitis and Sclero-Cystic Ovaries.—Lapeyre, of Tours (in *Archives Mens. d'Obstét. et de Gynécol.*, March, 1913), discusses the relation between these two conditions. He is of opinion that the association of the two lesions is not due to the mere frequence of their occurrence, but that both depend on a common cause. He suggests that the origin may be from the central nervous system, or that possibly peripheral irritation may act on the nervous system, which again reacts on the peripheral organs through the nerves. The lesions in the appendix and tubes are not necessarily due to microbic infection. It is to be noted that acute lesions are not in question. A series of seventeen cases is given in illustration of the thesis that if one set of organs alone is operated on the symptoms often recur. During a certain period all women's troubles were ascribed to ovaries, and castration was the panacea; then appendicitis was the scape-goat and oophorectomy was taboo. Lapeyre thinks we should attack both sets of organs, and, accordingly, the appendix should always be approched by a median incision, for it is the left ovary that is most frequently at fault. The ovaries can often be treated by simple ignipuncture of the small cysts, but the left ovary may require removal in part or completely. The uterus is often displaced, and should be fixed by some form of ligamentopexy. It is essential that operation should be early before the nervous system has become so profoundly affected as to produce concomitant viscero-ptoses, colitis, and such like secondary troubles.—E. H. L. Oliphant.

Inter-sexual Blood Reactions in the Horse.—Le Lorier, Paris (*Archives Mens. d'Obstet. et de Gynecol.*, April, 1913), continues some observations intended to elucidate the causation of the intoxications of pregnancy in woman. In the same journal last year he suggested that if the intoxications of pregnancy are due to the ovum, it is difficult to understand how maternal cells could poison the mother, and that the intoxication must accordingly arise from the paternal cells in the ovum. In support of this hypothesis he showed that man's serum agglutinates the corpuscles in human blood three times more frequently than does woman's serum. On the other hand, animals never suffer from the intoxications of pregnancy, and Le Lorier now gives the results of his researches with horse blood. The agglutination is never so marked as in human blood, but occurs in a modified way in 24 per cent of horse blood in general with serum of an entire horse; in 37 per cent with mare's serum, and in 27 per cent with serum from a castrated horse. In general terms a mare's corpuscles are more agglutinable than those of horses, whether entire or gelded. Percentage table—

	Entire.	Mare.	Gelding.	Means.
Entire's serum, . .	24	26	21·5	23
Mare's serum, . . .	33·3	44	36	37
Gelding's serum, . .	26	32	24	27
Means, ...	27	34	27	...

—E. H. L. O.

Salvarsan in Midwifery Practice.—Lemeland and Brisson, working in Bar's *service* at the Clinique Tarnier, give the results of their observations (*Archives Mens. d'Obstét. et de Gynécol.*, February and March, 1913) on treatment of pregnant woman by salvarsan and neo-salvarsan, as well as of lying-in women and sucklings. The subject is discussed at great length, and among their conclusions they express the following opinions:—A negative Wassermann reaction in the pregnant mother does not necessarily guarantee that the fœtus is unaffected. In moderate doses salvarsan may be injected into the pregnant woman without risk of killing the fœtus or of inducing miscarriage, but large doses are dangerous to mother and to fœtus; the dose should not be repeated till the observer has satisfied himself that the arsenic is being satisfactorily eliminated; the Wassermann reaction is inconstant and often temporarily negative; the treatment is of benefit to the fœtus; relapses are common, especially in the nervous system; a patient must not be considered cured till at least a year after the reaction has become negative. In the suckling grave cases are not to be treated by this method, but subacute cases do well. Neo-salvarsan seems to be more dangerous than salvarsan, and both may possibly fix the lesions in the nervous system. The difficulties and dangers are too great to allow of this treatment being adopted in current practice.

Chambrelent, Bordeaux, presented a report to the Soc. Obstét. de France (*Archives Mens. d'Obstét. et de Gynécol.*, April, 1913), in which he collates a large number of opinions and of reports from France and from abroad.

In the first chapter he discusses the administration of salvarsan indirectly to the fœtus through the nursing mother or through the milk of goats which have been injected. There is no doubt that the arsenic does pass into the milk, but it does so somewhat irregularly, and usually after some days' delay. Chambrelent is very guarded in expressing an opinion, but inclines to think that in some cases this method of treating infantile syphilis may be of benefit, though in some cases aggravation of symptoms has been noted, such as fresh syphilitic eruptions. He seems to agree with Ehrlich that to obtain benefit the nursing mother must herself be suffering from well-marked syphilis; that the aggravation of symptoms is probably due to the setting free of toxins from the destruction of spirochetes; that the treatment accordingly should not be begun till some days after the mother has received her injection, and that the benefit obtained is from antibodies, and not directly from the arsenic in the milk. He is also of opinion that other treatment—mercury, iodides, &c.—is often advisable or necessary. A table of 51 cases is appended.

In the second chapter he discusses the results obtained by direct injection of the suckling with salvarsan. Here, again, there is sometimes an aggravation of the symptoms, ascribed to the setting free of toxins by too large initial doses. A number of opinions and tables are given, and Chambrelent concludes, much as in the indirect method, that the direct method is sometimes of use, but must be supplemented by ordinary medication. Intravenous injections, on the German plan, are considered dangerous, so the intramuscular or subcutaneous route is preferable. The dose, until further experience warrants an increase, should not exceed 10-15 milligrams per kilo of body weight.—E. H. L. O.

Interstitial Tuberculosis of the Portio Vaginalis of the Cervix.—Petit-Dutaillis (in *La Gynécologie*, February, 1913), describes this condition and its clinical features. It arises, like cancer, in the mucosa of the cervix and in the thickness of the muscular wall, possibly also on the vaginal surface. It takes on a vegetating (proliferating) form or an ulcerative one. The process may be primary, due to growth of tubercle bacilli by direct implantation or from the general circulation, or it may be secondary, spreading to the cervix from the uterus or tubes. Petit-Dutaillis gives details of a case recorded by Richllot, and two of his own. The chronicity of the cases is a feature; one of the cases had been under treatment for several years. The special features found on examination are a *soft*, velvety, nodular growth round the os uteri, bleeding readily at a slight touch; the tissue is very friable; the growth feels like an ectopic cervix and looks like a cancer; it has a wine-red colour, and there is a marked absence of the hard border found in cancer. The general condition of the patient and the presence of other tubercular foci will assist the diagnosis. Microscopic and bacteriological investigation may be necessary to confirm it. A negative Wassermann reaction will help in excluding syphilis.

In regard to treatment, the evidence seems to show that mere local treatment by curetting, actual cautery, and excision of the part of the cervix affected may be followed by recurrence—six years later in one of the cases recorded, so Petit-Dutaillis recommends a complete vaginal hysterectomy.
—E. H. L. O.

DISEASES OF THE EYE.

The Central Light and Colour Senses in Chronic Glaucoma is the title of an interesting and instructive paper by Drs. Beauvieux and Delorme (*Archives d'Ophtalmologie*, February, 1913, vol. 33, p. 93).

The investigation, which the writers have undertaken at the instigation of Professor Lagrange, had for its object the discovery as to where the first evidences of change in chronic glaucoma became evident. (This, at least, is what it came to.) The subject is full of interest, and the work has been carried out most thoroughly.

The paper is long, but full of detail, and probably it will be more satisfactory to translate freely the conclusions at which the authors have arrived themselves than to attempt to pick out points of special interest.

The conclusions are under five headings:—

1. *Variations of differential light sense in chronic glaucoma.*—(*a*) The differential light sense (light difference) is first affected, being diminished when even ophthalmoscopic appearances are hardly altered from the normal. (*b*) This diminution is entirely independent of diminution of visual acuity or of contraction of the visual field. It is, on the other hand, entirely dependent on the state of the intraocular tension.

2. *Variations of absolute light sense.*—(*a*) The absolute light sense (light minimum) is only affected in cases of advanced chronic glaucoma, when the optic nerve entrance is cupped as a result of prolonged hypertension. (*b*) The presence of this alteration of absolute light sense is closely related to the atrophy of the optic nerve, which is such a serious concomitant of the glaucomatous excavation. (*c*) The atrophy of the nerve being a definite lesion, it is

not surprising that the regulation of the ocular tension has only slight influence upon the light minimum.

3. *Modifications of the colour sense.*—(*a*) The colour sense is generally normal in those cases where the luminous sense remains intact. (*b*) When atrophy has begun disturbance of colour sense is frequently found. This disturbance usually shows as confusion of blue and green, for degrees of saturation become higher as the disease is more advanced. The perception of red is only disturbed in advanced cases.

4. *Differential diagnosis.*—(*a*) The distinct diminution of the light difference with normal light minimum which we have found present in glaucoma is only found otherwise in papillary stasis. (*b*) In optic nerve atrophy it is the light minimum which is first affected. The light difference only begins to be altered in cases where ophthalmoscopic appearances are distinct. Faults of colour perception are then the rule.

5. *Prognosis.*—(*a*) Normal light minimum and colour sense together are proof of the integrity of the fibres of the optic nerve. (*b*) The prognosis is manifestly best when the light difference recovers after the instillation of pilocarpin. (*c*) It is also a very favourable sign if the improvement of light difference is not only produced by the use of myotics, but is brought about by the operation of Lagrange. (*d*) We are of opinion, but it is yet only a hypothesis, that the prognosis must be guarded in those cases in which the light difference remains defective after the intraocular tension returns to the normal (as a result of treatment, presumably).

These conclusions express clearly the opinions arrived at by the authors, and they seem to take in all the points of the paper. It only remains to say that the instrument used in the investigations was the chromophotoptometer of Chibret, Colardeau and Izarn. This the authors found to be more satisfactory than any modern instrument.—LESLIE BUCHANAN.

Injury to the Orbit and Skull by a Bullet from a Revolver—Hemianopsia *en quadrant* (*Archives d'Ophtalmologie*, April, 1913, vol. 33, No. 4, p. 193).—The case recorded by de Lapersonne and Velter is of great interest in so far as, first, the patient recovered after a serious bullet wound involving the brain, and, second, the symptoms are of quite particular importance as indicating the localisation in some degree.

The patient was only 14 years of age, and the calibre of the bullet is termed small, but the track of injury showed that the eye was injured and also the brain.

Radiograms taken showed that the bullet was lying almost exactly in the middle line, close to the posterior wall of the cranial cavity, and nearly at the level of the superior angle of the occipital bone.

The general state was bad, patient almost comatose and pulse slow. During the next few days the patient got worse, coma deepened, pulse slower, abolition of reflexes, and hyperæmia of the optic nerve of the opposite side. Lumbar puncture was performed twice, and great improvement followed, especially the second. The patient became quite bright. Under chloroform anæsthesia the injured (left) eye was excised. Improvement became more rapid after this, and examination could be made on the sixteenth day after the injury.

The intellect was still clouded, there being complete loss of comprehension of time and space. There was amnesia affecting circumstances before and since the injury. Aphasia of complex type was also noted at this time. No word-deafness, but some word-blindness. No motor aphasia was present, but aphasia by amnesia. Slightly later quadrant hemianopsia was noted.

At the last examination of the patient (10th April, 1913) it was found that the mind was perfectly clear, but there was slight amnesia and slight letter-blindness persisting. The defect of the visual field was much as when first discovered, and, in addition, slight retraction of the limits of the remainder of the visual field. There was no hemiopic reaction, and no other evidence of damage to the brain was discovered which would lead to a more precise localisation of the injury.

The authors give notes of some similar cases which enhance the value of the paper considerably.—Leslie Buchanan.

Regarding a New Method of Making a Subconjunctival Anterior Sclerectomy (*Archives d'Ophtalmologie*, April, 1913, vol. 33, No. 4, p. 199).—Lagrange, of Bordeaux, has had much to say about anterior sclerectomy since he first published his method of performing that very interesting and useful operation. Lately, it is to be regretted, much has had to be written in (as one may say) protecting his honour as author of a new idea, and this little paper is of this nature.

A paper has lately been published in the *Ophthalmic Review* entitled "Another operation for glaucoma," and Lagrange has felt so strongly regarding this encroachment that he has been at the trouble of translating much of the paper, and reproducing the plate from the above-named journal.

In essence, the new operation is manifestly a close copy of Lagrange's, and only one real difference is visible, namely, that in place of cutting out a curved portion from the periphery of the cornea, a triangle, which is designed to be equilateral, is removed. The extent of undermined conjunctiva also exceeds that of the original operation, in close imitation of the method of Elliot (trephining).

Lagrange passes in review the various features of this so-called "other operation," and terminates the paper by stigmatising it as "until now the most audacious transformation and deformation which my operation has undergone."

It would, no doubt, be equitable to call the new device a "new way of performing Lagrange's operation," and it is probable that it would have met with a better reception also.—Leslie Buchanan.

Books, Pamphlets, &c., Received.

The Edinburgh Medical Series. Diseases and Injuries of the Eye: A Text-Book for Students and Practitioners, by William George Sym, M.D., F.R.C.S.E. 25 full-page illustrations, 16 in colour, and 88 figures in text. London: Adam & Charles Black. 1913. (7s. 6d. net.)

Our Outsides: And What They Betoken. A Summary, by W. T. Fernie, M.D. Bristol: John Wright & Sons, Limited. 1913. (4s. 6d.)

Our Baby, for Mothers and Nurses, by Mrs. J. Langton Hewer. Fourteenth edition, illustrated. One hundredth thousand. Bristol: John Wright & Sons, Limited. 1913. (Boards, 1s. 6d.; leather, 2s. 6d. net.)

Verhandlungen der Berliner Medizinischen Gesellschaft. Band XLIII. Berlin: Druck von L. Schumacher. 1913.

Diseases of the Skin: A Handbook for Students and Practitioners, by David Walsh, M.D.Edin. London: Baillière, Tindall & Cox. 1913. (6s. net.)

Anaphylaxis, by Charles Richet, authorised translation by J. Murray Bligh, M.D., with a Preface by T. R. Bradshaw, B.A., M.D., F.R.C.P. London: Constable & Co., Limited. 1913.

Clinical Electro-cardiography, by Thomas Lewis, M.D., D.Sc., F.R.C.P. London: Shaw & Sons. 1913.

Gynecological Diagnosis and Pathology, by A. H. F. Barbour, M.D., LL.D., F.R.C.P.Ed., and B. P. Watson, M.D., F.R.C.S.Ed. With 8 plates and 202 figures. Edinburgh and London: Wm. Green & Sons. 1913. (7s. 6d. net.)

Lewis's Pocket Case Book, Designed for the Use of Students and Practitioners. London: H. K. Lewis. (1s. 6d. net.)

Oxford Medical Publications. A Manual of Venereal Diseases. Introduction by Sir Alfred Keogh, K.C.B.; History, Statistics, Invaliding, &c., Brevet-Colonel C. H. Melville, R.A.M.C.; Clinical Pathology and Bacteriology, Brevet-Colonel Sir Wm. Leishman, K.H.P., F.R.S., R.A.M.C.; Clinical Course and Treatment, Major C. E. Pollock, R.A.M.C. Second edition, revised and largely re-written, with new matter by Major L. W. Harrison, R.A.M.C. London: Henry Frowde and Hodder & Stoughton. 1913. (10s. 6d. net.)

Coprostasis: Its Causes, Prevention and Treatment, by Sir James Sawyer. Birmingham: Cornish Bros. 1912.

Practical Bacteriology, Microbiology, and Serum Therapy (Medical and Veterinary). A Text-Book for Laboratory Use, by Dr. A. Besson. Translated and adapted from the fifth French edition, by H. J. Hutchens, D.S.O., M.A., M.R.C.S., L.R.C.P., D.P.H.Oxford. With 416 illustrations, 149 of which are coloured. London: Longmans, Green & Co. 1913. (36s. net.)

Ionic Medication: The Principles of the Method and an Account of the Clinical Results Obtained, by H. Lewis Jones, M.D. London: H. K. Lewis. 1913. (5s. net.)

Le Diabète dit Arthritique (Intoxication Carno-Suerique) Pathogénie Hygiéne Alimentaire Traitment. Par le Dr. Albert Veillard. Paris: Émile Bouqault. 1913. (Prix, 1fr. 50c.)

Therapeutic Clinic of the Paris Faculty of Medicine, Beaujon Hospital, endowed by the Duc de Loubat. Treatment of Tuberculosis, Ordinary Therapeutics of Medical Men, by Albert Robin, translated by Dr. Léon Blanc with the assistance of H. de Meric. London: J. & A. Churchill. 1913. (18s. net.)

London Medical Publications. Applied Pathology: Being a Guide to the Application of Modern Pathological Methods to Diagnosis and Treatment, by Julius M. Bernstein, M.B.Lond., D.P.H.Camb., M.R.C.P. Illustrated with 5 coloured plates and 46 drawings. London: Henry Frowde and Hodder & Stoughton. (10s. 6d. net.)

University of Pennsylvania. Seventh Report of the Henry Phipps Institute for the Study, Treatment, and Prevention of Tuberculosis. Philadelphia: Henry Phipps Institute. 1913.

The Treatment of Hæmorrhoids and Rectal Prolapse by means of Interstitial Injections, by Dudley D'a. Wright, F.R.C.S. London: Henry J. Glaisher. 1913. (1s. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDED 14TH JUNE, 1913.

	WEEK ENDING			
	May 24.	May 31.	June 7.	June 14.
Mean temperature,	49·9°	55·5°	55·1°	51·7°
Mean range of temperature between highest and lowest,	13·7°	16·3°	15·7°	12·5°
Number of days on which rain fell,	7	4	5	5
Amount of rainfall, ins.	0·59	0·17	0·84	0·93
Deaths (corrected),	312	341	313	302
Death-rates,	15·9	17·4	16·0	15·4
Zymotic death-rates,	1·7	2·3	2·2	1·9
Pulmonary death-rates,	3·3	4·5	3·1	3·3
DEATHS—				
Under 1 year,	55	56	60	67
60 years and upwards,	70	83	72	75
DEATHS FROM—				
Small-pox,	...	...	...	...
Measles,	14	19	18	19
Scarlet fever,	1	5	4	1
Diphtheria,	3	1	2	3
Whooping-cough,	14	20	19	15
Enteric fever,	...	3	1	...
Cerebro-spinal fever,	...	1	...	...
Diarrhœa (under 2 years of age),	7	6	5	1
Bronchitis, pneumonia, and pleurisy,	36	58	41	36
CASES REPORTED—				
Small-pox,	...	...	...	...
Cerebro-spinal meningitis,	...	1	...	1
Diphtheria and membranous croup,	17	29	31	41
Erysipelas,	20	18	23	14
Scarlet fever,	60	63	67	56
Typhus fever,	...	...	...	...
Enteric fever,	9	2	4	6
Phthisis,	51	73	44	37
Puerperal fever,	2	1	...	...
Measles,*	448	508	484	470

* Measles not notifiable.

SANITARY CHAMBERS,
GLASGOW, 26*th June* 1913.

THE

GLASGOW MEDICAL JOURNAL.

No. II. August, 1913.

ORIGINAL ARTICLES.

THE AVOIDANCE OF UNSIGHTLY SCAR DEFORMITIES IN THE OPERATIVE TREATMENT OF CERVICAL LYMPHADENITIS.[1]

By JAMES H. NICOLL, M.B.,
Surgeon, Western Infirmary, Glasgow.

In the operative treatment of tuberculous arthritis there occurred some ten years ago a marked revision of opinion. About that time the discussions held in the meetings of the British Medical Association and other societies made it clear that there exist a considerable number of surgeons who hold that, in young people at least, no resection or excision of a joint compatible with future usefulness of the limb can be relied on to extirpate the disease. All that the most radical of excisions can effect is the more or less imperfect removal of such disease, in epiphyses, synovial membrane, and capsule, as can be detected by the sense of sight. Much tuberculosis is left in bone, ligaments, and capsule, as well as in the peri-articular bursæ, tendon sheaths, lymphatics, and fat;

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[1] Read at a meeting of the Medico-Chirurgical Society of Glasgow held on 7th March, 1913.

and the cure or persistence of the trouble depends upon whether or not the patients' local and general powers of resistance prove capable of taking efficient advantage of the opportunity given them by the excision, which not only removes large masses of hopelessly diseased tissue but sets up the hyperaemia, phagocytosis, and cicatrisation of repair. Surgeons holding that view believe that as much may be attained by the less mutilating and more conservative process of arthectomy or erasion of joints.

More recently a similar revision of opinion has taken place with reference to the method of choice in the operative treatment of tuberculous lymphadenitis, more particularly of cervical lymphadenitis. For long the surgical ideal was a radical "clean excision of all the diseased glands." To that end operations were practised which, beginning with incisions (linear, curved, or Z-shaped) of the ample dimensions of those familiar in the anatomy rooms, proceeded on the lines of extensive dissections, and resulted, frequently, in hideous deformities.

Without entering into exhaustive discussion of a question still *sub judice*, it will serve the purpose of this brief note on operative technique to recognise the growth of an opinion that complete removal of *all* the glands from a given region of the neck is not surgically attainable; that even the most mutilating incisions and dissections cannot, in such a region as the neck, effect more than the removal of a greater or lesser number of the more obviously affected glands; and that the same results may be attained by more conservative and less disfiguring methods. To surgeons holding that view the ideal in operating is the maximum of gland removal with the minimum of resulting deformity. The methods employed are mainly four. They are all old procedures, but, having been somewhat lost sight of during the period where extensive dissections were fashionable, they are now, in two instances at least, enjoying the reputation of novelty. They are as follows:—

1. Evacuation of the fluid contents of a "softened" gland by a cannula or aspirator thrust through the skin and subcutaneous tissues into the gland capsule. The method is not a good one. Only in the case of very "ripe" glands are the capsule contents sufficiently fluid to flow through a cannula.

2. Evacuation of the contents of a gland capsule by means of a small Volkmann's spoon introduced through a puncture made in one of the natural folds of the neck by means

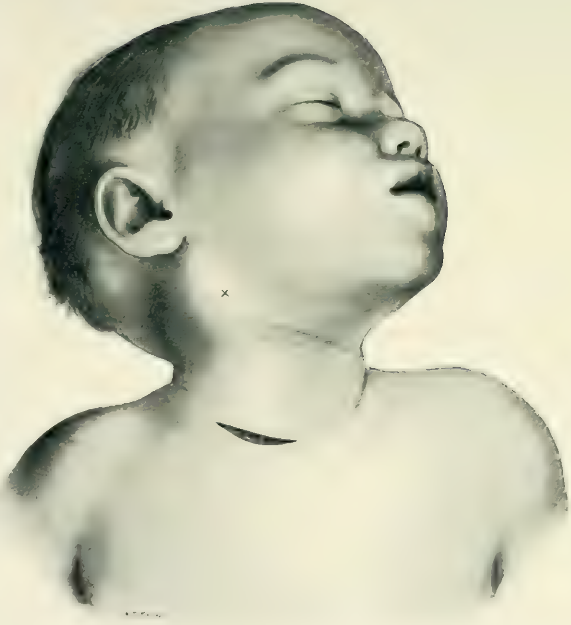

Fig. 1. Treves's Method (Modified).

First step.—The *incision* is placed in the first transverse crease above the clavicle. The *tunnel* between incision and mass of glands, x, is made by repeatedly thrusting in closed and withdrawing expanded a pair of blunt pointed scissors or dressing forceps.

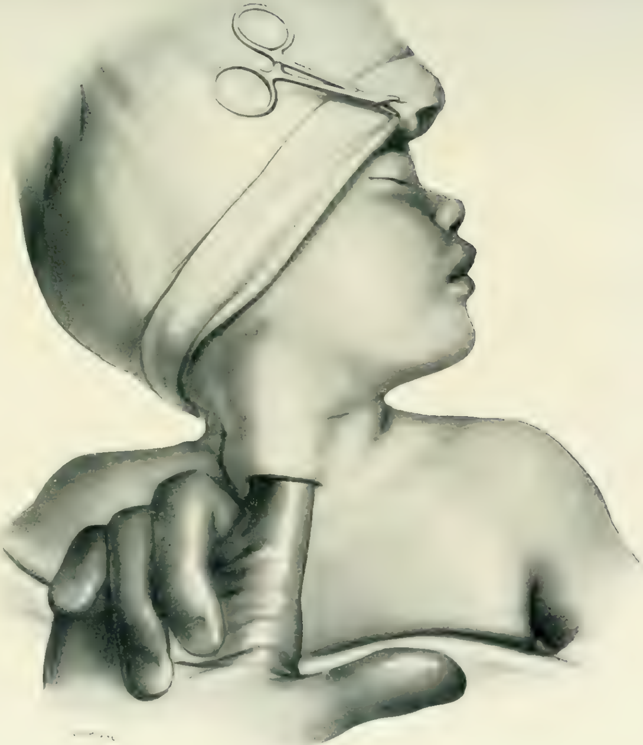

Fig. 2. Treves's Method (Modified).

Second step. *Separation* of the mass of glands by means of *digital* enucleation.

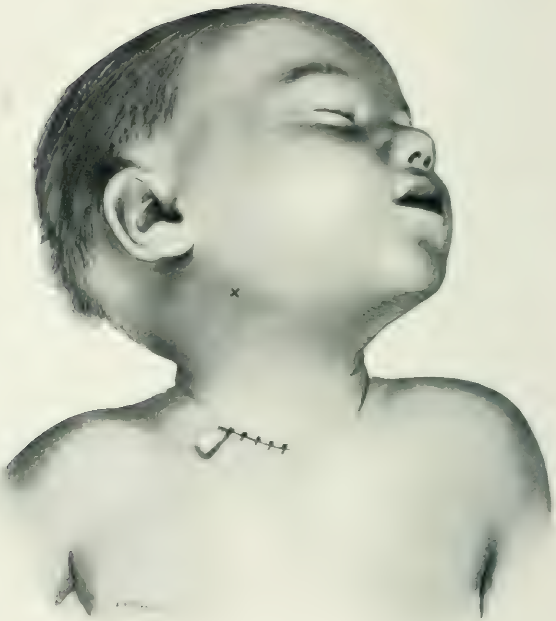

FIG. 3. TREVES'S METHOD (MODIFIED).

Wound sutured. Funnel drained by means of gauze or tube.

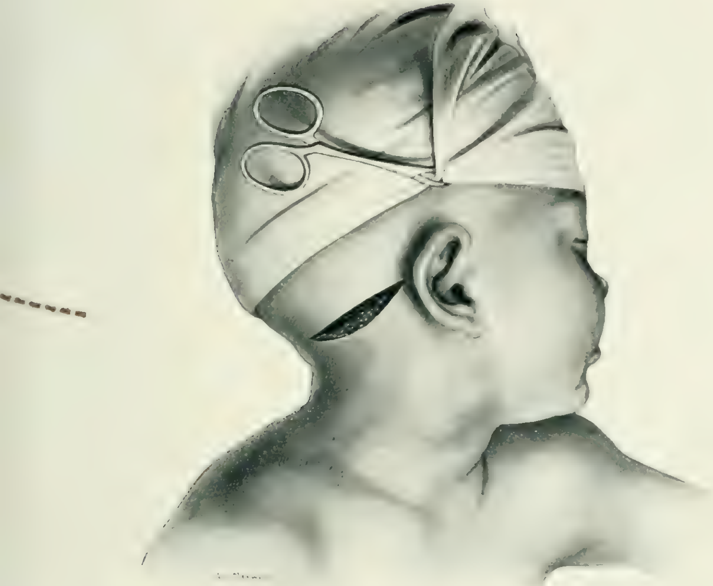

Fig. 4. Dollinger's Operation.

The *incision* is placed on the hairy scalp. The *tunnel* is made by thrusting in and expanding blunt-pointed scissors or dressing forceps, and extends from incision to mass of glands. The spinal accessory nerve is identified and pushed aside. The sterno-mastoid muscle may or may not be partially divided.

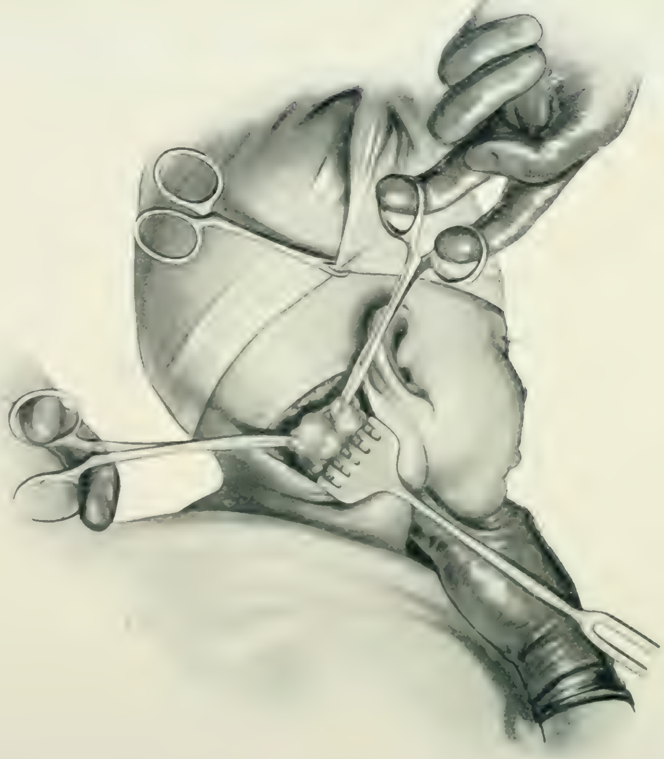

FIG. 5. DOLLINGER'S OPERATION

The glands are loosened by digital enucleation, aided by the use of elevator and scissors (during enucleation the surgeon often wears a forehead light or reflector, while an assistant retracts the lower side of the incision).

When the glands have been loosened they are brought into the wound (partly by

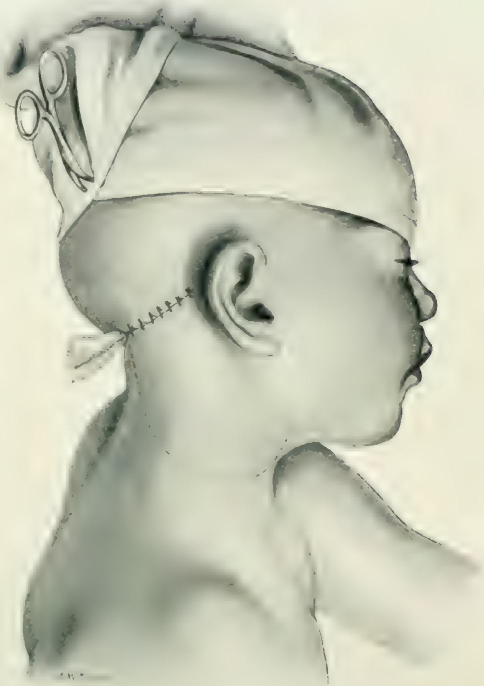

FIG. 6. DOLLINGER'S OPERATION.

Wound sutured, and drained by gauze or tube.
The dotted line indicates the extent of the excavation.

of a fine knife. In the case of a deep-seated gland it is necessary to pass a pair of sinus forceps along the knife and the spoon, between the partly expanded blades of the forceps. The method permits of a fairly complete evacuation of both solid and fluid capsule contents, and the resulting mark is in no way more noticeable than that of method 1, provided the puncture is made in, and parallel with, the line of one of the natural skin creases.

The aim of the two foregoing methods is the removal of the gland substance from within the capsule, which remains; and their scope is limited to cases in which one, or perhaps two, small glands have softened. (Where such single small glands have not yet softened a clean excision through a small incision closed by subcuticular suture leaves very little mark indeed.)

The aim of the two following methods is the removal of the capsules with the glands, and their scope is a wide one, large masses of glands being "tunnelled" out in many cases:—

3. *Treves's method.*—In the eighties of last century Treves, of Margate, popularised the method of excising cervical glands through a small incision made in a neighbouring natural crease or fold of the skin, and it is undoubtedly on his lead and practice that the modern operation is based. The drawings made for me by Mr. Kirkpatrick Maxwell illustrate the steps of the operation as carried out in an actual case (Figs. I, II, and III). The incision indicated is that suitable for males, and lies below the collar. In females, in cases where it is probable that evening dress may be worn, the incision is better made in a transverse crease about an inch higher in the neck. At that level it can be concealed by a necklet or ribbon. Subcuticular sutures are sometimes practicable. Where percuticular sutures have to be employed they are tied loosely to avoid marking.

4. *Dollinger's method.*—The method which Dollinger, of Budapest, devised and first practised in 1892 has become increasingly popular of late. The steps of the operation are indicated in Figures IV, V, and VI.

These two methods, Treves's and Dollinger's, are comparatively easy in young children, and may be readily carried out in the out-patient department. In the adult they are often tedious and difficult, because the distances to be tunnelled are greater, the adult neck is tougher, and the peri-adenitic adhesions in the case of old glands which have persisted from childhood are often very firm.

VACCINE-THERAPY IN THE TREATMENT OF GONOCOCCAL VULVO-VAGINITIS.[1]

By W. R. JACK, M.D., B.Sc.,
Physician, Glasgow Royal Infirmary.

SOME little time ago my attention was called by Dr. Leonard Findlay to a paper by Drs. Alice Hamilton and Jean M. Cooke[2] on "The Inoculation Treatment of Vulvo-Vaginitis." These authors treated a series of 84 cases, using injections of from 10 to 50 millions of gonococci, and they found that their results were incomparably better than those of the irrigation method, 76 cases being cured, 5 not cured, and 3 lost sight of. The average duration of treatment was seven weeks: that of treatment by other methods three to four months. Old cultures gave better results than recent, and a polyvalent stock vaccine was to be preferred to an autogenous one. On Dr. Findlay's suggestion I decided to make trial of the treatment, and I have to thank him for providing me with the patients upon whom it was carried out.

The cases were six in number, and in each the diagnosis rested on the discovery of the intracellular diplococcus in the discharge, and its negative reaction to Gram's stain.

The first two cases, G. M'K., a child of 3½ years, and M. M., aged 2 years, were sent me at the same time (15th October, 1910). In both the discharge was recent and abundant, having lasted a month in the case of G. M'K., and a fortnight in the case of M. M. In both, also, the gonococcus was abundantly present. I began treatment in both cases with a polyvalent stock vaccine, made from five different gonococcal strains, the initial dose being in G. M'K. 7½ millions and in M. M. 5 millions. Meantime I prepared an autogenous vaccine for the former case, and continued the treatment of the latter by the heterogenous vaccine. The doses used, after the first dose, consisted of 10 million organisms at weekly intervals, and the two cases progressed favourably at much the same rate, although in the second implication of the urethra existed, with frequent micturition. In the course of five weeks the injection and redness of the parts had become extremely slight, the discharge had very much diminished, and in the younger child the frequency had lessened. A fortnight later the discharge had ceased in the case of G. M'K., but continued, although slightly, in the case of M. M., along with slight frequency. When, in the first case, the discharge had been absent for ten days, the injection was omitted for a week, and this was followed by an almost immediate relapse, although a slight one. Weekly injections were therefore continued in both cases until the discharge ceased, which it did in each at about the same time, namely, the beginning of January, 1911. Thereafter the patients were kept under observation for three weeks. At the end of that time no sharply stained gonococci could be found in the case of G. M'K., although there were a few doubtful "ghosts," and the other patient, although reported well, did not appear for inspection. They were both to return in a fortnight, but failed to do so, and I have been unable to trace them since.

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[1] Read at a meeting of the Medico-Chirurgical Society of Glasgow held on 7th March, 1913.

[2] *Journal of Infectious Diseases*, 1908, vol. v, p. 158.

The total duration of treatment in these two cases was, therefore, two and a half months. The autogenous and the heterogenous vaccine appeared to be almost equally effective.

In the remaining cases the results were not so satisfactory.

Case III was that of a girl of 2½ years, whom I first saw on 26th December, 1911, when the condition of vulvo-vaginitis had lasted for two months, the discharge being at first blood-stained, afterwards purulent, and latterly, according to the mother's account, intermittent, appearing for about a couple of days at a time, with a day's interval. There was also slight frequency, but no pain on micturition. Gonococci were scanty.

This, then, was a case in which a favourable result might have been looked for from a few injections. I used a polyvalent vaccine of Messrs. Burroughs Wellcome and Co.'s in doses of 5 millions at intervals of four days. The first injection was followed by a condition of pallor, languor, and drowsiness which lasted for twenty-four hours, but there were no further ill-effects. In the course of a month the discharge, which was only once reported absent for a day after it had been more closely observed, had become very slight; but as a further month's treatment did not produce any further improvement, the mother ceased to attend.

Case IV was that of a girl of 9 years, first seen on 10th February, 1912, in whom vulvo-vaginitis, with abundant purulent discharge, had been present for two months. There was also frequent micturition. Gonococci were abundant in film preparations. Treatment was begun with doses of 5 million gonococci, a polyvalent vaccine of Messrs. Burroughs Wellcome & Co.'s being used. The discharge ceased within five days of the first injection, and remained absent for a fortnight, after which it returned, though in comparatively small amount. Under treatment by the same doses it became exceedingly scanty, but was not entirely abolished even after six weeks. The dose was therefore increased to 10 millions once a week: after three weeks it was further increased to 20, then to 40, 80, and 120 millions, with a lengthened interval. When this final dose was given five months had elapsed from the beginning of treatment, and still a trace of discharge remained when the patient ceased to attend.

Case V was a child of 4 years, first seen on 12th July, 1912, when there had been a vaginal discharge for three weeks. There was, however, a history of "soreness" about the vulva which had been in existence for, at all events, some months, and had been treated by zinc ointment. The vulvo-vaginitis was, therefore, probably of some standing, although the discharge had been noticed only when the child came on a visit to her aunt. When I saw her there was an abundance of thick creamy pus, but comparatively little inflammatory redness. Micturition had been at first painful, but this symptom had passed off. Gonococci were numerous. In this case I used an autogenous vaccine, the first dose being 5 millions, the second 10, and as this caused some languor and exhaustion the next two doses were 7½ and 5 millions, after which the dose was raised again to 10, 15, and 20 millions.

During this period of three months the discharge became much less, and finally ceased about 20th October. Slight irritation of the parts persisted for some time longer, and a last inoculation of 7½ millions was therefore given on 21st November. The patient reported for the last time at the end of the year, and then returned to the country entirely free from symptoms. The duration of treatment was four months.

Case VI, a child of 2½ years, was first seen on 27th September, 1912. Her illness was of three months' duration, with frequency and abundant vaginal discharge. In this case an autogenous vaccine was used, beginning with doses of 5 millions. Even this small dose at first caused symptoms of exhaustion, and was therefore given at weekly intervals. When it was better tolerated the attempt was made on three occasions to increase it, but each injection of 10 millions produced at first increased irritation. The last of them, however, after the irritation had passed off, was followed by improvement and by almost complete cessation. The very slight discharge, however, persisted in spite of renewed injections of 5 millions, and though these have been persevered with, and there was a period of a fortnight (from 20th January, 1913, till 4th February) in which symptoms were quite absent, yet they recurred, and up till now the discharge has not entirely ceased.

These results do not appear very encouraging. In three of the six cases a clinical cure was reached—in the first two after two and a half months' treatment, in Case V after over three months. In the other three the condition remained uncured, in Case III after two months' treatment, in Case IV after five months, and in Case VI after more than five months. It is to be noted that in all the cases a comparatively speedy improvement was attained, the irritation and discharge being much lessened, or becoming almost minimal; but in the unsuccessful cases it seemed to be impossible to get rid of this remainder whatever dose was used. The time occupied in the cure, although it may compare favourably with the average results of irrigation treatment, is probably not much less than that occupied by favourable cases of that treatment, and the proportion of cases in which a result was obtained in this relatively short time is only 1 in 2.

Two other cases of vaginitis were sent me by Dr. Findlay. The first of these proved to be due to staphylococcal infection, and yielded readily to vaccine treatment; the other, which was a case of mixed infection, with a streptococcus of the fœcalis type as the predominant organism, proved very obstinate.

It may be added that opsonic index determinations were not made in any of these cases, owing to the difficulty of obtaining anything like accuracy with gonococcus cultures. The clinical indications were a sufficient guide to the regulation of the dosage.

Vaccine therapy in the treatment of the gonococcal vulvo-vaginitis of children has been advocated much more extensively in America than in this country. Eyre and

Stewart,[1] in their paper on the vaccine treatment of gonorrhœal infections, speak in very guarded terms of its use in primary acute conditions, while advocating its employment in the complications, and particularly in gonorrhœal arthritis. Among later writers, Majors Pollock and Harrison, in their book on *Gonococcal Infections*,[2] published last year, give it their blessing in a single sentence, but do not afford any details. Allen, in the just published fourth edition of his *Vaccine Therapy*,[3] warmly advocates it, and gives details of two papers dealing with the subject, that of Hamilton and Cooke, already noticed, and one by Butler and Long.[4] These workers dealt with two series of cases, the first including twelve individuals, the second twenty-five. They used doses varying from 1 to 50 millions, but ultimately preferred a dose of 5 millions. Cure was reached in all the cases of the first series, although in three after a relapse, the average duration of treatment being "several weeks." Of their second series thirteen cases were chronic, and eleven recovered completely in an average of thirty-nine days, while the twelve acute cases all recovered in an average of forty-three days. A polyvalent vaccine was used. Allen mentions also a third paper dealing with seventeen cases, ten of which were cured and seven improved in an average of nineteen days. Allen's authorities, therefore, are all of them American, and he does not appear to have had any personal experience of the treatment. A paper by R. Wallace Hamilton,[5] in the *American Journal of Obstetrics* for 1910, deals with a series of eighty cases. The author used stock vaccines in strengths varying from 100 to 500 millions per c.c., and, except in children under six months, his usual practice was to begin with a dose of 50 millions, and to increase each dose by 10 millions, with a five days' interval, until a dose of 90 millions was reached. The interval was then lengthened to seven or ten days. In most of the acute cases six injections were sufficient, but in the long-standing cases further injections were necessary, the dose rising as high as 200 millions. No case was considered cured unless it was found free of gonococci for a period of two months, during which examinations were made weekly for the first month, and afterwards fortnightly. In three years' work at the Vanderbilt Clinic 260 cases were treated by irrigation, and 80 cases by vaccine. Sixty per cent were cured by the irrigation method, 90 per cent by vaccines. The time required for cure was with the irrigation method 10·1 months, with the vaccine method 1·7 months.

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[1] Eyre and Stewart, *Lancet*, 1909, vol. ii, p. 76.

[2] *Gonococcal Infections*, by Majors C. E. Pollock and L. W. Harrison, Oxford Medical Publications, 1912.

[3] *Vaccine Therapy*, R. W. Allen, fourth edition (London: H. K. Lewis), 1912.

[4] *Journ. Amer. Med. Assoc.*, 1908, p. 704 and p. 1301: abstracted by Allen, *loc. cit.*

[5] "Vaccine Treatment of Gonococcus Vulvo-Vaginitis in Out-Patient Children," *Amer. Journ. of Obstet.*, vol. lxi, 1910.

These figures are very striking, and if anything resembling these results had been generally attained in America, the vaccine treatment must have been universally adopted. But a paper by Rubin and Leopold,[1] of New York, which appeared in January of this year, opens with the words:—"The general disappointment encountered by most clinicians and specialists with the therapy of gonorrhœal vulvo-vaginitis in children . . . prompted us to make the present investigation." From this contribution it would appear that the papers I have summarised represent results which are comparatively rarely attained, and that in the hands of others the results have been more in accordance with my limited experience. The most that I should venture, personally, to urge for vaccine treatment is that it does appear to have a modifying effect upon the process, and that although it cannot be relied upon to cure, it does comparatively rapidly reduce the discharge, and with it the discomfort, to such a degree that they become much more manageable.

The paper of Rubin and Leopold is, however, of interest from another point of view, in that it suggests a cause for the persistence of gonorrhœal vulvo-vaginitis. By means of examination with the urethroscope, the authors found that the affection was not confined to the superficial parts, but that almost invariably the external os and the cervical canal were infected at the same time, the external discharge being thus merely a symptom of a deep-seated internal infection. They suggest, therefore, deep medication carried out by means of the urethroscope.

A few months previous to their paper, Klots,[2] writing on the treatment of persistent cervical catarrh, and of the vulvo-vaginitis of children, gave enthusiastic praise to the use of Nassauer's siccator, a glass bulb through which powders such as kaolin can be deeply insufflated into the vagina, after that cavity has been swabbed out and dried. If the observations of Rubin and Leopold be confirmed, it is to be hoped that by one or other method of deep medication the treatment of gonorrhœal vulvo-vaginitis may be shortened, and an opprobrium of medicine may thus be removed.

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[1] "The Cause of the Persistence of Gonorrhœal Vulvo-Vaginitis in Children," Rubin and Leopold, *Amer. Journ. Diseases of Children*, January, 1913.

[2] Klots, *South African Med. Record*, 10th August, 1912; abstract in *Univ. Med. Record.*, October, 1912.

CONGENITAL OCCLUSIONS OF THE ŒSOPHAGUS AND LESSER BOWEL.

By G. H. EDINGTON, M.D., D.Sc.,
Surgeon, Western Infirmary, Glasgow.

(*Concluded from* p. 33.)

C. Ileum.

There are five specimens (and probably a sixth specimen) of obstruction of the ileum in my series.

1. (Case II).—*Obstruction 37 cm. above ileo-cæcal junction; Volvulus; Adhesions—visceral, omental, and parietal.*

A female infant, aged 6 days, was admitted into the Royal Hospital for Sick Children on 23rd June, 1907, with a history of vomiting from the day after birth. No meconium had been passed, but there was a discharge *per anum* of whitish slimy material. The anus was well developed, and the anal canal was patent, admitting the little finger as far as the middle of the second phalanx. There was no feeling as of a septum with distended bowel above, but rather of a channel *gradually narrowing so that its termination could not be reached by the finger-tip.* An obstruction high up in the bowel was diagnosed, and the abdomen was opened in the left iliac fossa. A finger, passed into the wound, was directed to the left along the parietal peritoneum and into the iliac fossa, where a cord-like, undistended portion of bowel was encountered in the situation of the sigmoid flexure. The abdomen was closed, and the child died five days later from progressive weakness, with constant vomiting.

At the *post-mortem* examination the right flank was occupied by greatly distended bowel extending from the iliac fossa up to the margin of the right lobe of the liver, to which it was adherent below and internal to the fundus of the gall-gladder. The great omentum was adherent, high up, to the mesial surface of this piece of bowel.

Further examination of the parts showed the condition depicted in the diagram (Fig. 5). On referring to the diagram it will be seen that in the iliac fossa the lower (proximal) end of the distended bowel is directed horizontally towards the left (middle line), and joins a coil of small intestine. In front of the junction a piece of cord-like, undistended bowel runs upwards and backwards into the flank, and terminates on the mesial aspect of the upper end of the above-mentioned dilated gut. This undeveloped bowel, on being followed down, is seen to course backwards round

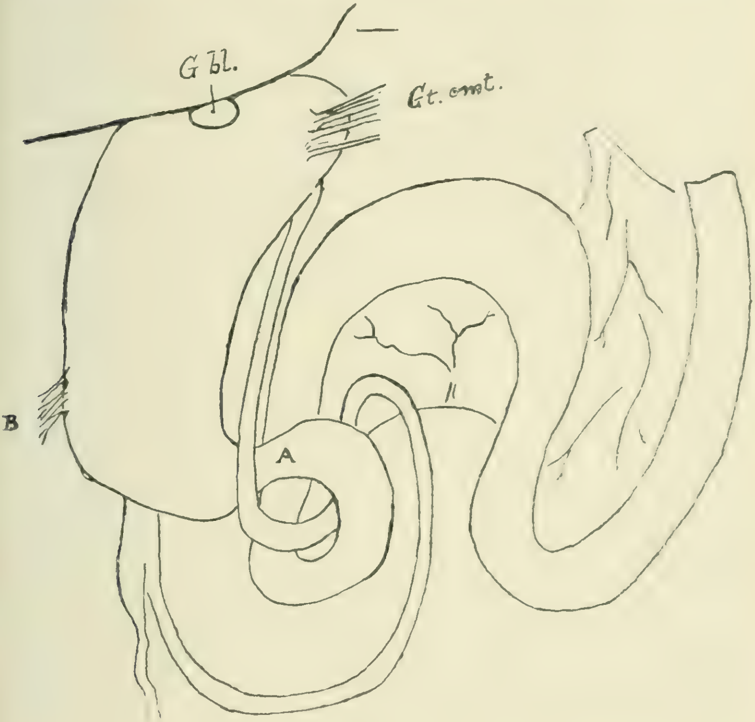


Fig. 5.

Obstruction of ileum by septum; volvulus (Case II). *A*, seat of volvulus; *B*, parietal adhesions; *Gt. omt.*, ditto to great omentum; *G. bl.*, gall-bladder.

the horizontal junction, and then to the left. The distended gut, on being freed from the liver and turned down, is found to be adherent on its outer side for a distance of 1·75 cm. to the parietal peritoneum. This adhesion contains large blood-vessels ramifying in a backwards direction on the abdominal wall. On the mesial aspect of the dilated bowel its mesentery stretches between it and the undeveloped portion. On following the mesentery down it is found to accompany the undeveloped bowel over the horizontal piece, to the under aspect of which it is attached, and then to pass to the left and upwards behind. At this point the undeveloped gut courses backwards and to the right to join the cæcum.

This somewhat confused arrangement of the bowel was due to *volvulus*, which was untwisted by turning downwards and forwards (a half turn), and then from right to left (one complete circle and a half), the dilated gut. This manipulation showed the very great degree of dilatation of the distended gut—nearly 4 cm. in diameter. The volvulus had occurred about 12 cm. above the distal end of the dilated portion of gut, and had *not produced any obstruction of the lumen of the bowel*. There was nothing abnormal in the arrangement of the mesentery, and the portion corresponding to undistended segment of the ileum contained well-developed lymphatic glands. The whole of the great intestine was undistended. The cæcum lay on the psoas muscle, to which it was firmly attached a little below the iliac crest.

Measurements.—The great intestine, from cæcum to anus, measured in length 43 cm. The small intestine had a length of 188 cm., and the distended portion joined the undistended at a point 37 cm. above the ileo-cæcal valve.

Details of obstruction.—Attempts made *post-mortem* to force fluid from the narrow into the dilated gut were unsuccessful, and resulted in rupture of the end of the contracted gut, and extravasation under the peritoneum of the dilated.

On the anterior surface of the junction of the dilated and contracted portions of the bowel a fibrous adhesion stretches between these portions (Fig. 6, *a*). The adhesion is situated a little in front of the mesenteric line, and the continuity of the latter can be displayed only when the adhesion is lifted up. After removal of this adhesion, and of the mesentery behind it, the termination of the dilated portion of the gut is seen to be doubled on itself, so that the ballooned blind end is directed downwards on the mesial aspect of the ascending piece of gut, behind the line of attachment of the mesentery. The doubling is maintained by fibrous adhesions stretching between the apposed peritoneal surfaces. Two of these adhesions are situated one behind the other (Fig. 6, *b* and Fig. 7, *d*), the anterior being just behind the line of mesenteric attachment, which passes upwards and to the left, to be continued into the mesenteric line on the contracted bowel beyond the obstruction. These adhesions form stout bands, and between them is a shorter adhesion, to be again referred to.

On cutting away the anterior wall of the distended bowel the doubling is seen to have produced a kinking, so that the lumen of the bowel is very much encroached upon by a spur. This spur, and the short, substantial, fibrous adhesion (mentioned above) which assists in its maintenance are well shown in Fig. 7. The inner surface of the wall of the gut is marked by transverse ridges. The seat of junction with the contracted gut is indicated by a slight swelling, of circular outline, with a blind depression in its centre. A probe introduced into the contracted bowel was forced through the junction at this spot, but, as was afterwards found on microscopic examination, the communication was artificial. The junction was bisected in the vertical direction, and it was then found that in the posterior half the contracted gut ran upwards and outwards on the surface of the distended gut, from the lumen of which it was separated by a thin septum. Extravasation of some of the *débris* from the contracted gut was seen under the peritoneum of the distended gut. In the anterior half the septum showed an oval opening, allowing of communication between the dilated and contracted portions of gut: this was the opening made by the probe.

Histology.—Sections made in the long axis of the bowel showed that a complete mechanical obstruction existed, the continuity of the lumen of the gut being interrupted by a septum formed of mucosa and submucosa (see Fig. 8). Owing to faulty preservation of the specimen the mucosa of the distended gut was not demonstrable; but this layer was better preserved in the contracted gut. The thickness of the occluding layer of tissue was markedly lessened at the point corresponding with the depression in the wall of the distended gut. This depression was situated nearly opposite to the commencement of the lumen of the contracted gut.

The *muscularis* was much more marked in the contracted than in the distended gut. It did not form part of the occluding septum; but, although it passed continuously from distended to contracted bowel on the concavity—*i.e.*, mesenteric aspect—of the angle of junction, it apparently formed here a spur. On the convexity the muscularis was not nearly so well marked, and near the junction it apparently disappeared from the contracted, and was sparsely represented in the distended, gut. It was not clear whether the spur was a secondary formation, due to kinking, or indicated an attempt on the part of the muscularis to take part in the obstruction.

In none of the sections was the mucosa of the contracted bowel intact. In all it had been ruptured by the fluid injected into the contracted bowel to distend the latter, and the rupture opened into an artificial cavity formed by separation of the layers of the wall of the congenitally distended gut.

The next specimen belongs to a different type, and is an example of complete interruption, the malformation being multiple.

2. (Case III).—*Multiple interruption of ileum, high up; coiled up mass of undistended bowel.*

A female child, aged 4 days, was admitted into the Royal Hospital for Sick Children on 13th July, 1910, with a history of no passage *per anum* of meconium. The anus was well formed, and admitted a probe a distance of 6·25 cm.

The abdomen was opened and an artificial anus made; but the child died in the course of twenty-four hours.

On *post-mortem* examination it was found that the artificial anus had been made in the small intestine, a distance of 46 cm. below the pylorus. There was complete interruption of the bowel 25·5 cm. further down (71 cm. from the pylorus). Beyond this there was spherical mass of bowel coiled on itself, and beyond this again the bowel recommenced and continued, without interruption, to the cæcum, a distance of 91 cm. The great intestine measured 39·5 cm., and, like the distal portion of the small bowel, was of normal shape but undistended.

Closer inspection of the parts at the seat of obstruction showed that the proximal portion of the bowel only apparently terminated abruptly; it was sharply kinked at a spot 1·25 cm. from its actual extremity, so that the part beyond the kink was collapsed, and was at right angles to the rest of the bowel. The short portion distal to the kink tapered to a termination which was in close apposition to the upper (mesenteric) extremity of the coiled mass next to be described. The kink was maintained by adhesions stretching from the mesentery over the right side of the collapsed bowel beyond. The distended bowel, after hardening, measured 2 cm. in diameter; that of the portion distal to the kink was 0·75 cm. On cutting open the bowel the kink was seen as a spur of the bowel wall on the mesenteric side.

In close contiguity with the termination of the kinked bowel lay the convoluted mass of undistended bowel. In the hardened specimen it was conical in shape (Fig. 9), and attached by its apex to the mesentery. It roughly resembled a cochlea with three turns, and it was so bound together in peritoneum that it could not be straightened out. On bisecting the cone, the cut surface showed various sections of coils held firmly together. From apex to base the cone measured 3·5 cm., and 2·5 cm. across its base.

Following the free edge of the mesentery an ovoid body was reached at a distance of 2 cm. from the attachment of the conical mass. This body measured 1·25 cm. in length, and 6·25 mm. transversely, and, on being bisected, longitudinally, presented the naked-eye appearance of a piece of bowel closed at both ends.

It was immediately succeeded by the upper end of the collapsed bowel, to which it was attached by adhesions independent of the mesentery. The collapsed bowel had a diameter of 7·8 mm.

The arrangement of parts is shown in the figure (Fig. 9), which was drawn after hardening. The specimen is viewed from the right side.

Histology.—Two parts of the malformation were examined microscopically:—

1. The kinked termination of the distended bowel.
2. The conical mass of convoluted, contracted bowel.

1. Longitudinal sections of the *kinked termination of the distended bowel* (Fig. 9A) showed that the kink was formed by an infolding of the whole thickness of the bowel wall to form a "spur." The structure of the bowel wall above the kink was normal, save that the epithelium of the villi had disappeared. It was present, however, in the deeper recesses of the mucous membrane. The *muscularis* consisted of two layers—inner (circular) and outer (longitudinal). As the region of the kink was approached certain well-marked changes in the muscularis were observed. On the *convexity*, the *circular* bundles rapidly became smaller in area at a

spot where the bowel began to curve in to the narrow (a little above the level of the "spur" formed by the infolding of the opposite wall), and from here on to the commencement of the contracted terminal piece of bowel they formed a thin but distinguishable layer. On the other hand, the *longitudinal muscularis* was continued to the extremity of the contracted gut. The muscularis was differently arranged in the *concavity* of the kink. Here the *circular* bundles were continued into the proximal limb of the spur, for about two-thirds of its length. They remained of large sectional area, till about halfway towards the apex of the spur. They then diminished, but were of good size till they altogether ceased at a point short of the apex by one-third of the length of the spur. Just about the spot where the thick bundles diminished, the *longitudinal* ceased rather suddenly, and were not recognisable in the remainder of the spur, or in the contracted gut wall continuous with it. The mucous membrane of the contracted gut was much destroyed, and, with the exception of some remains in the *débris*, was unrecognisable.

In one section two spaces lined with cubical epithelium occurred in the thickness of the wall, and just beyond the termination of the cavity of the contracted gut. These spaces were in close relationship to the terminal strands of the longitudinal muscularis.

2. Longitudinal sections of the *conical mass* showed, to the naked eye, six or seven transverse or oblique sections of gut. The arrangement of parts is shown in Fig. 10. Of these the peripheral seemed to stain better than the two larger ones in the centre of the mass. *Under the microscope* five of the seven sections show some muscularis: in none is there any trace of epithelium. In one section the muscularis was succeeded by areolar-like submucosa: but generally this was not represented, and the muscularis was in contact with the *débris* which filled the lumen of the gut. This *débris* showed as deeply-stained granules and masses of various sizes, arranged peripherally and succeeded by very faintly-stained material of similar character. The masses resembled clumps of epithelium, and in some cases suggested crystalline substance. The different sections were bound together by tissue, which was in some parts areolar, but in most fibrous, and which not only formed a wrapping for the mass, but also was present between the various sections of bowel.

As regards the *muscularis:* in none of the sections was there a complete circle of muscle-fibres. In the five which showed muscularis the muscle was the *longitudinal* one. In none did it extend more than half the circumference of the gut, and, except in the case of the most central of the sections, it was confined to the outer halves of the peripheral sections.

It should be added that, while the *circular* muscularis was not very evident, traces of it were found here and there under the longitudinal bundles.

The next in the series resembles No. 2, inasmuch as there is complete interruption of the bowel. It differs from that already described, in respect of the presence of peritonitic adhesions which may have had a causal relationship to the malformation.

3. (Case IV).—*Interruption of ileum, high up and multiple; omental band associated with interruption.*

A female child, aged 4 days, was admitted into the Royal Hospital for Sick Children on 21st October, 1911. There was a history of there having been no movement of the bowels since birth. A rubber catheter could be passed into the rectum to a distance of about 5 cm., and on withdrawal was observed to be covered with thick white pasty material. The abdomen was opened in the left iliac region, and an artificial anus made in a loop of distended bowel. The patient died, collapsed, 32 hours later.

On opening the body after death the great omentum in the pyloric region was found stretched out to form a *band* about 3·25 mm. thick and 7·5 cm. long. This band passed downwards and to the left to be attached to a gland-like body in the mesentery at the seat of interruption of the continuity of the bowel.

The interruption had occurred in the small bowel, and was distant 91·5 cm. from the pylorus, and 101·5 cm. above the ileo-cæcal junction. The cæcum and appendix were situated high up on the front of the right kidney, so that there was practically no ascending colon. From cæcum to anus the bowel measured 44·5 cm.

The artificial anus had been made 15 cm. above the blind end. The gut beyond the interruption was collapsed, its diameter varying between 0·5 and 0·75 cm. The distended gut measured about 4 cm. across at its termination: higher up it was about 2 cm. The duodenum was little more than 1 cm. (These measurements are not true diameters, being made with gut lying flat.) The stomach measured 6·25 cm. in length and 4·3 cm. transversely.

The parts were fixed before a detailed examination of the seat of interruption was made. Inspection then showed the arrangement figured in the outline drawings (Figs. 11, 12, and 13).

From below upwards in the drawing (Fig. 11) are seen (1) the distended proximal bowel, with its blind extremity; (2) the collapsed bowel distal to the interruption; and (3) a piece of tissue 2·5 cm. long and 1 cm. across.

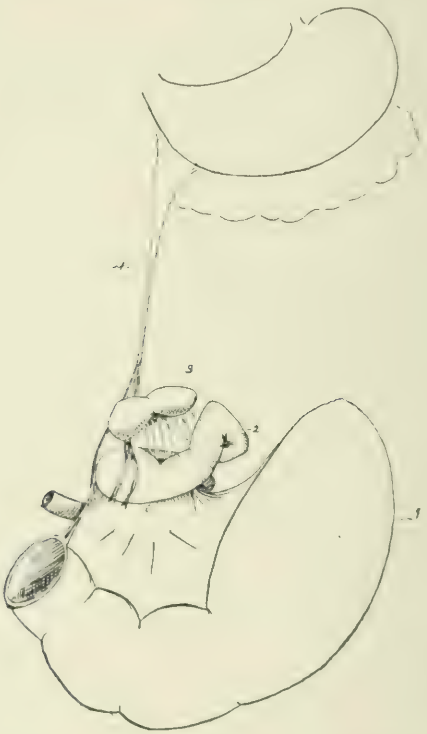
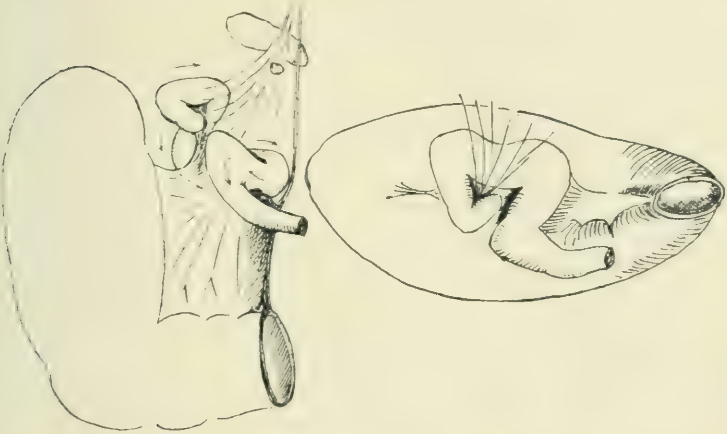


Fig. 11 (Case IV).

Interruption of ileum by omental band. Relationship of parts was distorted during hardening. The observer is looking at *left* side of mesentery, and bowel-loop is inverted, so that distal (collapsed) limb is between stomach and proximal (distended) limb. 1, distended bowel; 2, non-distended bowel distal to interruption; 3, bean-like body; 4, omental band.

The peritoneal coat of the distended gut was smooth until the apex of the blind end was reached. Here it presented (Fig. 14) an irregular surface over an area of about 1·25 cm. in diameter. On cutting open the distended gut the mucous membrane was seen to be transversely ridged, save at the extremity, where it became granular. At the very apex was a pit-like depression of pinhole size, with raised edge. The portion of gut-wall corresponding with the area of granular mucous membrane was very thin and translucent, especially at the "pit," and the irregularity of the peritoneal coat here was suggestive of its having been forced up from the muscularis.

The collapsed gut which formed the distal limb of the interrupted loop was irregularly bent on itself. This was seen both from the right and the left side: but the arrangement was best seen when the bowel was viewed from its free surface (opposite to the mesenteric attachment). It was disposed so as to form a figure resembling an interrogation mark, angular instead of rounded. The portion forming the head of the interrogation mark was over 9·5 cm. long, and its concavity was towards the right side of the mesentery.



FIGS. 12 AND 13 (Case IV).

In Fig. 12, parts viewed from *right* side. Mesentery (omitted from Fig. 11) shown passing to blind end of non-distended limb. *Arrows* indicate direction of fæcal current. In Fig. 13, collapsed gut viewed from *below, i.e.*, from surface opposite attachment of mesentery.

The third structure to be noticed is that shown in the figure (Figs. 11, 12) as lying above the collapsed gut and in close relationship with the omental band. This structure resembled a lymphatic gland, and had the appearance of an elongated bean, the hilum of which was turned towards the collapsed gut below it. It was firmly bound to the collapsed gut by fibrous tissue. This fibrous tissue passed into the concavity of the loop of collapsed gut: but some of the fibres passed over the convexity of the gut and blended with its mesentery. The omental band already mentioned passed behind the bean-like structure, and spread out, some of its fibres blending with the fibrous tissue joining that structure to the collapsed gut: other fibres of the band passed downwards in front of the loop of collapsed gut, and ended in its mesentery. In the concavity of the bean-like body lay a small spherical node, embedded in the fibrous tissue.

Histology.—Sections were made of—

1. The distended bowel—(*a*) some distance from blind end; (*b*) blind end near "pit"; (*c*) "pit."
2. The bean-like body, with attached node.

1. (*a*) Longitudinal sections of the *wall of the distended gut, some distance from its blind end*, including a transverse ridge (valvula connivens), showed two well-marked layers of muscularis (Fig. 15). At the seat of the ridge there was some increase in thickness of the circular layer of muscle; here also there were very large vessels in the submucosa, which was slightly thicker than in the remainder of the section. There was well-marked arrangement of villi; but the epithelium over them has not been preserved during hardening. Here and there epithelium of glandular recesses was visible.

(*b*) Sections of the *blind end, close to the "pit,"* showed mucous membrane with an occasional villus, but devoid of epithelium (Fig. 16). Here and there in the deeper parts of the mucous membrane cross-sections of Lieberkuhn's glands were seen, and immediately external to them was the well-marked muscularis mucosæ. In the tissue external to the muscularis mucosæ were numerous irregularly-coursing bands of muscular tissue, which became thinner on being followed from the edge to the central portion of the section. There was in the outer part of the very vascular subperitoneal tissue an irregular cavity with deeply-stained crystalline contents which caught the edge of the razor.

Part of the contents had come away; the remainder were adherent to the wall. The cavity was surrounded by fairly dense connective tissue of the subperitoneal coat, and close to the cavity were small calcareous foci embedded in the fibrous tissue.

(*c*) Sections *including the "pit"* (Fig. 17) showed the latter to be formed by a depression affecting the mucosa and muscularis, and leading into an irregular cavity containing calcareous material. This cavity corresponded with that seen in (*b*), where it was situated in the subperitoneal tissue. Here, however, it lay rather in deeper part of the mucous membrane and muscularis.

2. Sections made in long axis of the bean-shaped body, and including the node in its concavity, showed that both structures were really a portion of malformed intestine. In only one portion of the section, viz., that corresponding to the "node," was there any approach to the normal structure of bowel-wall. In one section the appearance of this portion was that of a transverse section of bowel. The mucosa was well-formed, but the epithelium very indifferently preserved. The submucosa was, except at one spot, very much compressed and flattened. At this spot, as well as at another where the submucosa approached its normal dimensions, the two layers of muscularis were well-marked. For about three-fourths of the circumference the longitudinal muscularis was easily distinguished: the circular, however, was clearly marked in only about one-third of the circumference. In subsequent sections this portion of bowel was found to be continuous with the larger mass, of which it was really a part.

Elsewhere in the section (particularly along the convexity) were well-marked bundles of muscularis—chiefly longitudinal—but nowhere was there the appearance of a complete section of bowel. No mucosa was distinguishable, and the abnormally vascular and abnormally bulky submucosa filled the lumen of the gut.

The following specimen in my series differs from the preceding examples of malformation of the ileum, in that the abnormality affects the terminal portion of the bowel, and that the blind ends of the large and small bowel are connected by a "cord" running along the free edge of the mesentery.

4. (Case V).—*Interruption near termination of ileum; blind end connected by cord with ileo-cæcal region of large bowel.*

This specimen was obtained from the body of a siren fœtus, born at full term, and given to me by Dr. Stirling Robertson, of Clydebank.

There was no trace of external genitals or anus, and the hinder end of the body ended in a "tail," which was curled ventrally on the lower abdomen. On straightening out the "tail," a rounded band (muscle?) stood out prominently in the middle line of the hypogastrium. The tip of the "tail" showed posteriorly a sulcus in the integument.

The abdomen was opened and the viscera, much softened by decomposition, were removed.

The cæcum and appendix were found in their usual situation, from which region the ascending colon ran upwards and ended blindly, under the liver. The remainder of the colon was absent.

The lower part of the ileum was distended with meconium, and measured from 2 cm. to 2·5 cm. across when filled with water. It seemed to end blindly about 2·5 cm. from the cæcum. From the end of the distended bowel a cord-like structure (Fig. 18), measuring about 2·5 cm. long by ·4 cm. across, extended along the free edge of the mesentery to the cæcum, which it joined above and internal to the origin of the appendix (at a spot corresponding to the normal ileocæcal junction). Further examination of this "cord" showed that in its proximal (ileal) half it was really stenosed bowel, being possessed of a lumen which communicated with the lumen of the ileum. The orifice of communication was narrower than the lumen of the stenosed bowel, and at the seat of junction there was some angulation similar to, but in a lesser degree than, that seen in specimen No. 2 (Fig. 9). A probe, passed into the stenosed bowel, stopped short halfway along the "cord."

The appendix, which was 2·3 cm. long, arose from the inner and lower aspect of the cæcum and coursed upwards and outwards in front of the bowel. Its origin was infundibuliform. The meso-appendix arose from the front (right side) of the mesentery, and from it an ileo-cæcal fold extended downwards over the front of the terminal part of the "cord."

The cæcum and ascending colon measured 7·5 cm. in length; its diameter as the bowel lay flat was 1·25 cm. The mesentery in the ileo-cæcal region was normally shaped.

The small intestine, from the pylorus to the blind end of the ileum, measured 188 cm. in length.

Histology.—Transverse sections were made of the distal half of the "cord" connecting the large and small intestine. The appearances seen under the microscope were as follows:—

Peritoneum could not be distinguished (doubtless owing to *post-mortem* maceration). There was a scanty layer of *subperitoneal tissue*, not very vascular, contrasting with the richly vascular subperitoneal tissue of the attached mesentery. The *longitudinal muscularis* was well marked, except at the part of the circumference furthest removed from the mesenteric attachment. The *circular* muscularis was not nearly so well marked. It was best seen in the region of the attachment of the mesentery. From here it thinned off on both anterior and posterior surfaces of the "cord," and it was hardly distinguishable in the remaining half of the circumference. The *submucosa* was quite distinguishable, being specially bulky in the anterior wall at the part furthest removed from the mesentery. Succeeding this was the *mucosa*, a reticulum with the spaces for the most part empty, and in the centre of this tissue were masses of deeply-stained material, possibly desquamated epithelium, filling a narrow lumen. A little nearer the cæcum, however, there was complete absence of both lumen and deeply-stained masses (Fig. 19).

On being traced, in successive sections, towards the cæcum, the "cord" expanded and a lumen again became apparent, communicating with that of the cæcum at the origin of the appendix.

Briefly, the structure of the "cord" was that of intestine. It was impossible to say whether it was obliterated or merely stenosed; but in its middle portion it certainly was not functionating as a tube.

I now come to describe a condition which may be looked upon as *want of growth* rather than defect of development.

5. (Case VI).—*Congenital non-expansion of part of ileum and of colon; absence of septum or interruption of continuity of bowel.*

This condition occurred in a male infant, aged 3 days, who was admitted into the Royal Hospital for Sick Children, 22nd April, 1910, with a history of there having been no passage of meconium *per anum*. The anus was pervious, admitting a "large rubber catheter." The abdomen was opened, and the colon was found to be in the form of a firm cord-like structure. No operative treatment was undertaken.

After death the stomach and intestines were removed for examination. The small intestine, from pylorus to cæcum, was 180 cm. long; the great bowel was 33 cm. The small bowel was dilated in its upper part, and reached its maximum at a spot about 99 cm. from the pylorus. At this spot its diameter was 4 cm. (nearly). From here down it gradually narrowed till it became cord-like about 28 cm. above the ileo-cæcal junction. The cord-like character of the bowel continued from here onwards into the colon, and persisted right down to the anus. The diameter of the cord-like portion of the ileum was a little over 6 mm.; that of the colon was slightly less.

The bowel was cut open to determine if any obstruction of the lumen existed. None was found. The contents of the large gut were quite unstained by bile, and the same condition was found in the lower part of the small gut. Higher up the bowel contained well-stained fluid fæcal matter.

Histology.—Transverse sections were cut of (1) distended small gut; (2) non-expanded ditto; and (3) colon.

The arrangement and form of the coats of the small gut in (1) and (2) were normal. In the distended bowel, however, the muscular tunics were of much larger size than in the non-distended, having a sectional area of generally three or four times the size of those in the latter. The epithelium of the mucosa, on the other hand, was of larger size and better preserved in the non-distended bowel.

In the section of the colon the different layers of the wall were well formed. The lumen was filled with structureless *débris* (? inspissated mucus).

In (2) and (3) there was apparently no structural malformation. The sections showed *in miniature* the normal appearances of the parts.

Closely allied to the specimen described above is the following:—

6. (Case VII).—*Congenital non-expansion of colon; rupture at hepatic flexure, by enema.*

A male infant, aged 3 days, was admitted into the Royal Hospital for Sick Children on 19th September, 1910, on account of obstruction of the bowels. An enema had been given on the preceding day, and another on the day of

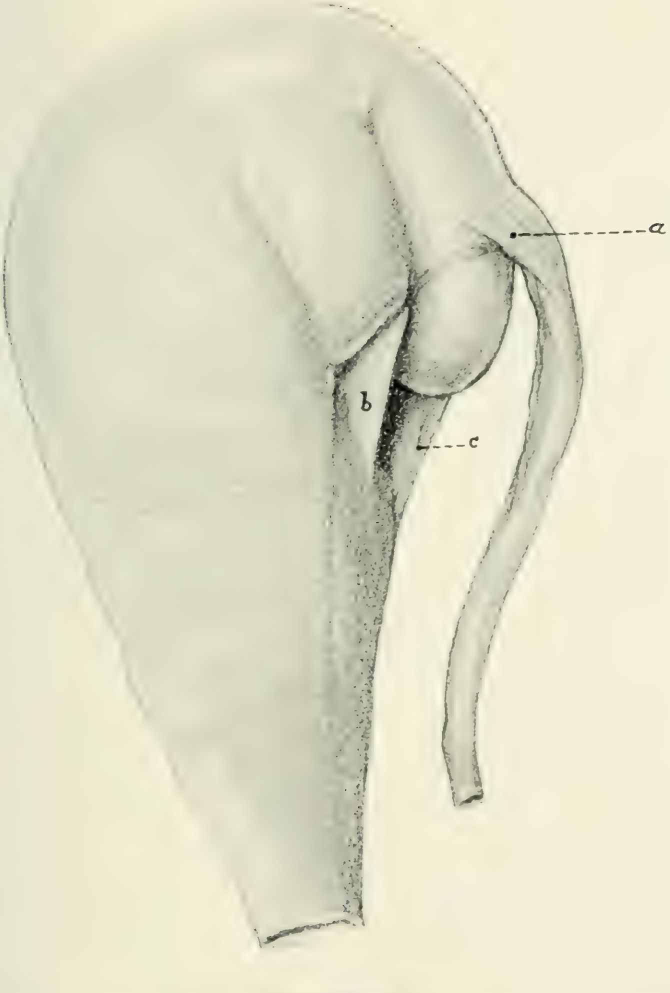


FIG. 6 (Case II).

Natural size, showing details of external surface at seat of occlusion. *a*, *b*, and *c*, peritoneal adhesions. *b*, situated immediately behind attachment of mesentery (p. 92).

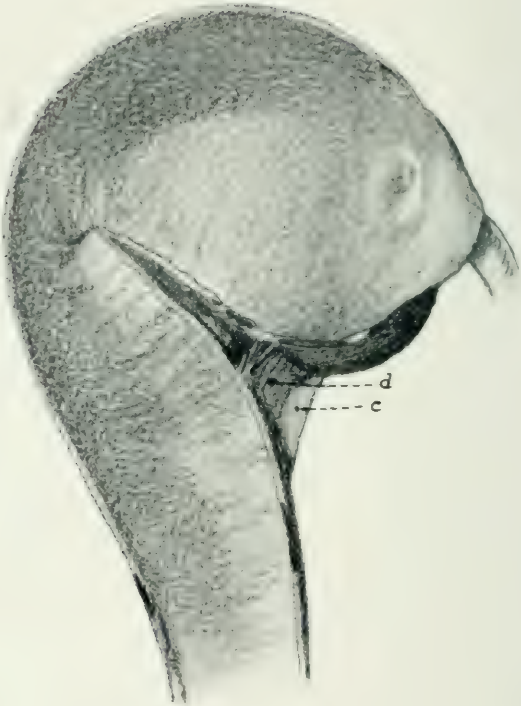


Fig. 7 (Case II).

Showing appearance on longitudinal section of distended gut. *c* and *d*, adhesions, *d* assisting in maintaining spur; ***d*** is hidden by *b* in preceding figure (p. 93).

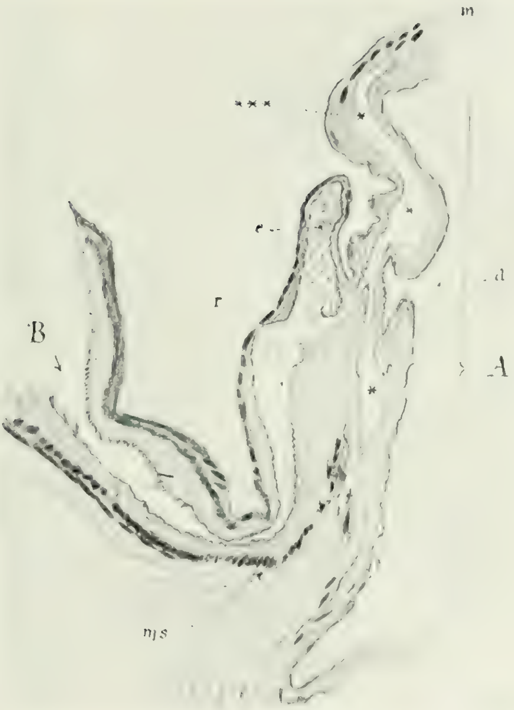


Fig. 8 (Case II).

Junction of distended and non-distended gut (from behind). *A*, lumen of distended gut; *B*, non-distended bent upwards during hardening; * * *, cavity produced artificially by splitting of tunics of distended gut when fluid injected into non-distended; *d*, blind depression at region of occlusion; *e*, epithelial *débris* in cavity of non-distended gut; *m*, muscularis; *m s*, ditto, entering spur; *r*, rupture (artificial) of epithelium of non-distended gut (p. 93).

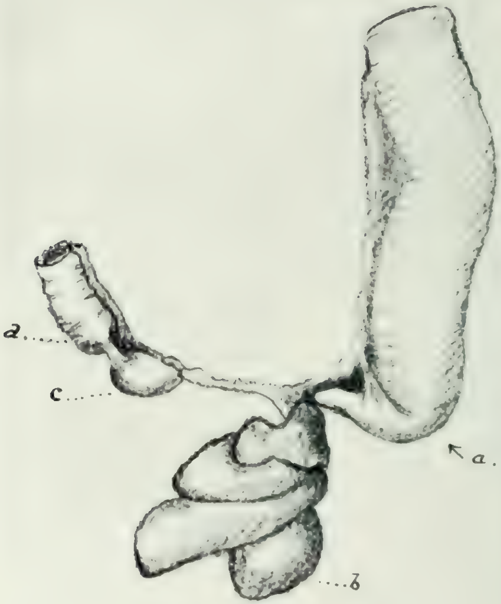


FIG. 9.

Multiple interruption of ileum (Case III). *a* points to kink; *b*, convoluted mass; *c*, ovoid body; *d*, upper end of non-distended bowel (p. 95).

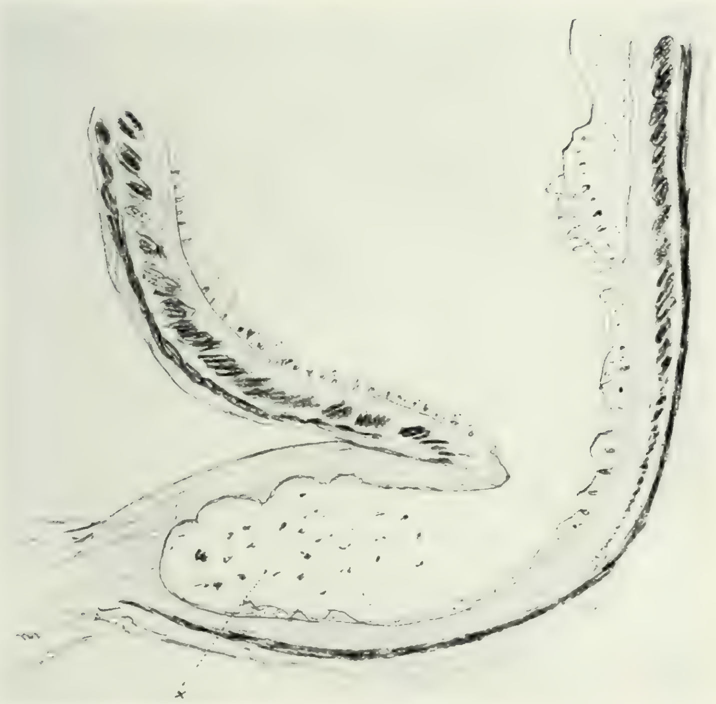


FIG. 9A (Case III).

Longitudinal section at seat of kinking of gut shows defect of muscularis referred to on p. 95. *, epithelial *débris* in stenosed gut distal to kink.

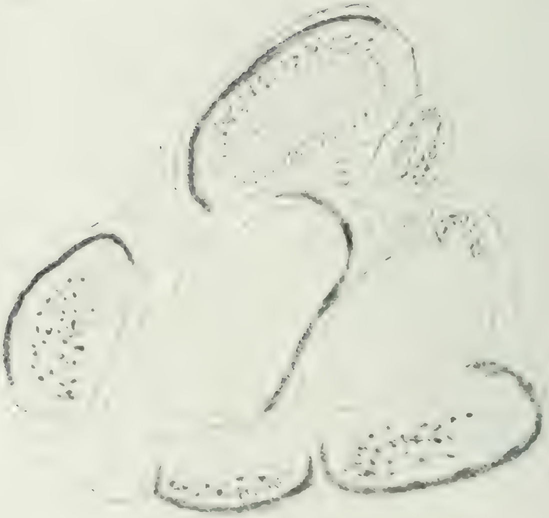


FIG. 10 (Case III).

Longitudinal section of conical mass (*b*, Fig. 9), showing incomplete muscularis (p. 96).

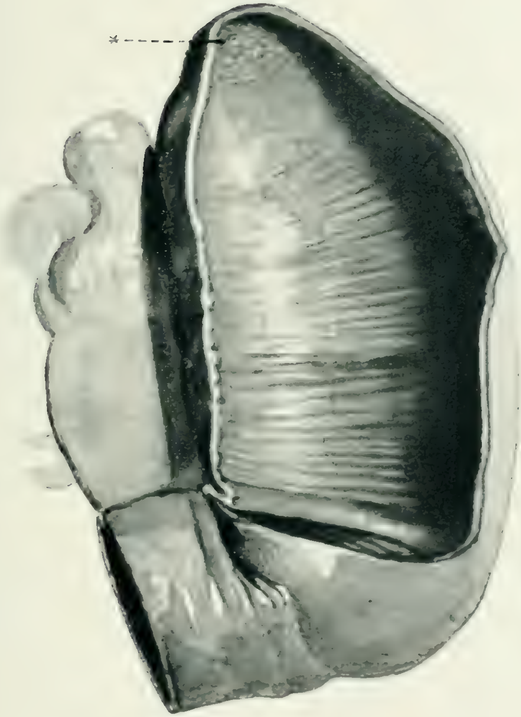


Fig. 14 (Case IV).

Interior of distended gut, viewed after cutting away part of wall, shows ridged mucous membrane giving place to granular surface at apex of blind end. indicates "pit" referred to in text (p. 99).

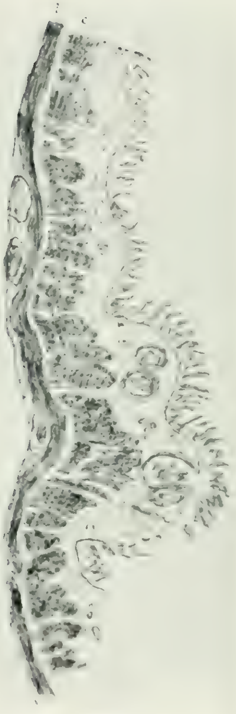


FIG. 15 (Case IV).

Longitudinal section of wall of distended gut some distance from blind end. Muscularis well marked; *l*, longitudinal; *c*, circular (p. 100).

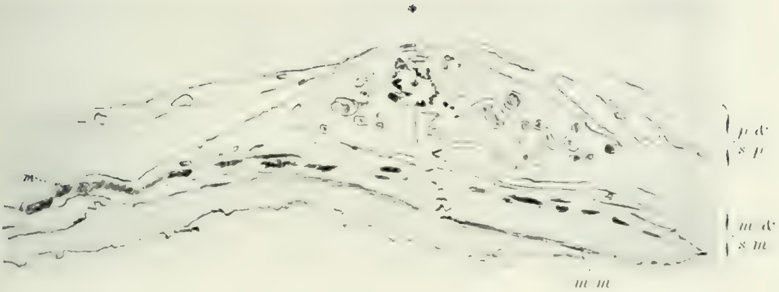


FIG. 16 (Case IV).

Distended gut. Section of blind end, close to "pit." *m*, muscularis; *m m*, muscularis mucosæ; *m & s m*, muscularis and submucosa; *p & s p*, peritoneum and subperitoneal tissue; *, cavity with crystalline contents. Note tear in wall here from damage to razor-edge by crystalline material. Great vascularity of subperitoneal tissue around the cavity (p. 100).

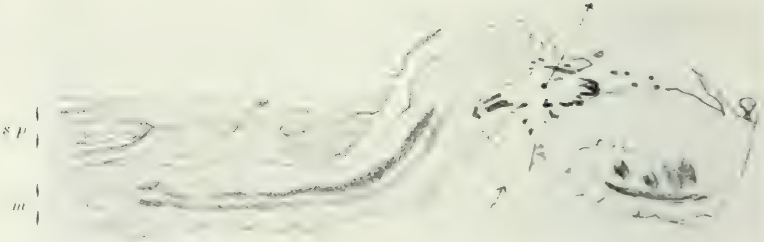


FIG. 17 (Case IV).

Same as last, but shows communication between the "pit" (*arrow*) and ([illegible]) cavity with crystalline contents; *m*, muscularis; *sp*, subperitoneal coat, very vascular (p. 101).

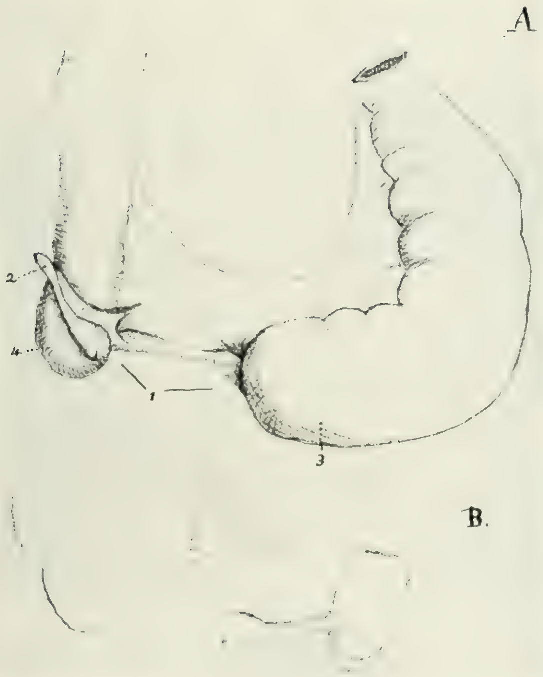


Fig. 18 (Case V).

A, parts from in front 1, cord-like communication between blind ends of ileum and caecum; 2, appendix and meso-appendix; 3, ileum; 4, caecum. *B*, parts seen from behind (p. 102).

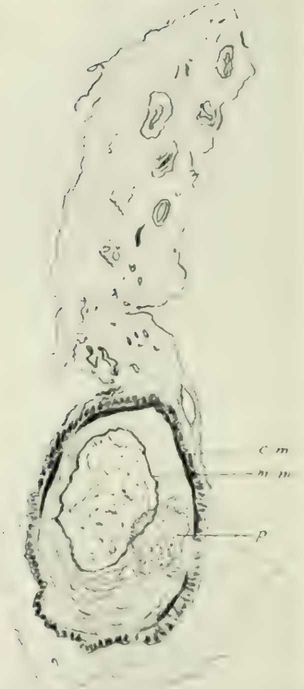


FIG. 19 (Case V).

Section of "cord" and mesentery: lumen obliterated. *p*, Peyer's patch, partly within muscularis mucosæ, *m m*; *c m*, circular muscularis incomplete in distal portion of circumference (p. 103).

admission, but without result, and the patient was accordingly sent to hospital.

There was great distension of the abdomen. A finger introduced into the rectum felt the bowel-lumen narrowing like the finger of a tight glove. Both testicles were in the scrotum, and the hinder end of the body was well formed and without any external malformation. The abdomen was opened in the left iliac region, and from it a quantity of bloody fluid and gas escaped. So much was this the case that it was at first thought that a piece of bowel adherent to the anterior parietes of the abdomen had been opened; but on enlarging the wound it was found that the fluid and gas were in the peritoneal cavity. The sigmoid flexure was brought out for inspection. It was collapsed, but was more succulent than is usually seen in a case of congenital obstruction higher up in the bowel, *i.e.*, there was less of the feeling as if the intestine were a fibrous cord. An artificial anus was made in a distended loop of small intestine; when it was opened, somewhat light olive green fæcal matter escaped.

The patient died early on the following day. *Post-mortem* examination showed fæcal matter and fluid in quantity lying free in the peritoneal cavity. The small bowel was much distended in its whole length; but the distension was less marked in the terminal portion of the ileum. The cæcum was of about normal size, but its wall was thicker than normal.

In the colon, on the anterior surface of the hepatic flexure, was a rupture, transverse in direction, and involving half the circumference of the bowel. Meconium issued from this rupture, and, on water being injected upwards from the sigmoid region of the bowel, a cast about 2·5 cm. long was expelled through the tear. This cast was stained green at the end next the tear; its distal portion was white.

There was no sign of a definite obstruction (septum, stenosis, or interruption) in any part of the lumen of the bowel.

The above series of specimens of malformation of the ileum presents a number of points for consideration, *e.g.*, frequency of ileal malformation; nature of malformation; its situation (part of bowel affected); etiology.

Before taking up these, however, it will be convenient here to tabulate the specimens, giving their principal features, exclusive of their histology.

TABLE GIVING THE PRINCIPAL FEATURES OF THE SPECIMENS OF MALFORMATION OF THE ILEUM.

No.	Sex.	Nature of Occlusion.	Number of Occlusion.	Seat of Occlusion.	Remarks.
1	F.	Septum of mucosa and submucosa.	Single.	Junction of middle and lower thirds of ileum (37 cm. above ileo-cæcal region).	Volvulus, not causally related to occlusion; peritoneal adhesions—visceral, omental, and parietal.
2	F.	Interruption, with blind ends.	Multiple (3).	Highest in upper third of ileum.	At termination of distended bowel, kink, succeeded by small portion of stenosed bowel; beyond first interruption, coiled mass of undistended gut, succeeded by ovoid blind piece.
3	F.	Interruption, with blind ends.	Multiple (2).	Higher in upper half of upper third of ileum.	Omental bands associated with interruption.
4	?	Interruption, with "cord" joining blind ends.	Single.	Terminal portion of ileum.	Upper part of "cord" had lumen, and was kinked on termination of dilated bowel, as in No. 2.
5	M.	*Nil*; non-expansion.	Single. Wide-spread.	Probably 87 cm. from duodeno-jejunal junction—*i.e.*, in upper third of ileum.	Partial expansion had taken place downwards as far as upper part of lower third of ileum.
6	M.	Non-expansion.	..	Not determined.	Occlusion probably near termination of ileum, as distension less marked here than higher up.

Coming now to consider the points mentioned above, the first of these is

(*a*) *Frequency of ileal malformation.*

The comparative frequency, in the various parts of the bowel, of congenital malformation has already (*vide supra*, p. 26) been dealt with, and statistics show that malformation occurs most frequently in the jejuno-ileum. Following the rough and ready method of dividing the jejuno-ileum into fifths, and considering the upper two-fifths as jejunum and the remainder as ileum (Quain[1]), it will be seen that in all the specimens in my series the malformation affected the *ileum*.

(*b*) *Nature of malformation.*

The following conditions are illustrated by the series of specimens:—

1. Obstruction by a *septum*.

2. *Stenosis*, with kinking at commencement of narrowing, and with *multiple interruptions*.

3. *Multiple interruptions*, associated with *omental band* and peritoneal *adhesions*.

4. *Stenosis*, with obliteration and *cord-like continuation* in mesentery.

5. *Non-expansion* of lower ileum and colon.

Putting aside for the present non-distension of a large tract of bowel (specimens 5 and 6), the remaining specimens exemplify in its different grades of severity congenital obstruction of the bowel—stenosis; ditto with communicating cord; septum; and interruption of the continuity of the bowel-wall.

These varieties are all well known to pathologists, and examples are to be found recorded by writers on the subject. I have already (*vide supra*, p. 28) referred to the different forms, with special reference to the duodenum. Taking Forssner's[2] figures for the jejuno-ileum, this writer found in literature 103 cases. In only 58 of these, however, were the details given sufficient to formulate statistics. Of these 58, in 16 the bowel was obstructed by a *complete membrane;* in 4 the *membrane* was *incomplete;* in 19 there were 2 *blind ends connected by a cord* which was *in no case* tunnelled: in the remaining 19 the *blind ends* were *free*.

Expressed in percentages the *frequency* of the different forms of obstruction is as follows:—

Membrane—		
Complete, . . .	16	20 cases (34·4 per cent).
Incomplete, . .	4	
Interruptions, with blind ends connected by a cord, . .		19 cases (32·75 per cent).
Free blind ends, . . .		19 cases (32·75 per cent).

If the two varieties with blind ends be taken together, they are almost twice as frequent as the membrane cases.

In the present series of 4 cases, 3 showed blind ends, and only 1 a membranous septum.

(*c*) *Situation of malformation.*

As just mentioned above, the *ileal portion of the jejuno-ileum* was the part affected in all of my four cases. There were, however, differences as regards the part of the ileum. In two (specimens 2 and 3), where there were multiple interruptions, but all quite close together, the proximal interruption was situated in the upper third of the bowel. In specimen 1 it was at the junction of the middle and lower thirds, and in specimen 4 it was at the termination of the bowel.

It would seem from the literature that congenital occlusion of the jejuno-ileum is most frequently met with *at the lower end of the bowel.* Thus Silbermann,[3] in his table of cases, mentions it as having occurred at the lower end of the ileum ten times. In 12 cases the exact situation is not given. In 3 cases it was between the jejunum and ileum (in 2 of these there were multiple occlusions). In 1 case it was at the middle of the gut. In 8 cases there were multiple occlusions.

In the cases given by Gärtner[4] the preponderance in favour of the lower end of the ileum is more marked:—

Jejunum,	1
Between jejunum and ileum,	2
Middle of small gut,	1
Multiple occlusions,	3
Lower end of ileum,	9
Not stated,	2*

* One of these presumably in lower part of gut.

Bland-Sutton[5] almost certainly referred to the lower ileum when he wrote "imperforate ileum occurs in the region where the primitive alimentary canal is in communication with the yolk-sac by means of the vitelline duct" (see below).

According to Ballantyne,[6] "congenital intestinal obstruction may be situated in the jejunum. . . . The ileum is apparently a common seat of intestinal obliteration. . . . Probably most of the cases reported as instances of congenital occlusion of the small intestine affect the ileum. . . . The seat of obstruction is frequently the place where the small intestine becomes continuous with the large." He adds, however, that multiple constrictions have also been noted.

The importance of determining as accurately as possible the *situation* of the malformation depends upon the relationship of situation to one of the theories of the etiology of congenital occlusion. This will be referred to below. Meanwhile, I would simply draw attention to the fact, observed by previous writers and here illustrated by specimens 2 and 3, that the *malformation may occur in the upper part of the ileum.* This fact was also illustrated by another specimen, which I recorded some years ago.[7]

(*d*) *Etiology.*

As already mentioned (*vide supra*, p. 30), a large number of theories have been propounded with the object of explaining the etiology of congenital occlusion of intestine.

Of these I propose to consider three—

1. *Embryological.*
2. *Fœtal peritonitis.*
3. *Volvulus.*

1. *Embryological.*—The view that the malformation is the result of a departure from the normal course of development is favourably entertained by many writers. Several theories fall to be considered under this heading.

(*a*) Ahlfeld,[8] in 1873, advanced the theory that the physiological hernia of the umbilical loop of bowel continued from traction by a persisting omphalo-mesenteric duct, and might later be separated from the abdominal cavity by the coming together of the body-walls at the umbilicus. Such a process seemed to him a likely explanation of the appearances which he found in one case—a newly-born infant—in which a tumour was present, attached to the umbilicus by a fine pedicle, and containing necrotic bowel filled with meconium. At the *post-mortem* examination the blind ends of the ileum and colon were found adherent in the neighbourhood of the umbilicus.

This theory affords a likely enough explanation of cases in which the malformation affects the portion of bowel associated with the vitelline duct, viz., lower ileum.

(*b*) Bland-Sutton (*loc. cit.*), in 1889, promulgated the theory attributing defects of the ileum "to excessive coalescence of the intra-abdominal section of the vitello-intestinal duct." The ground on which this author bases his theory is that "congenital obstruction and narrowing of the alimentary canal are always found in the situation of embryological events." He instances, in support of this, the occurrence of imperforate pharynx at the spot where fore-gut and stomodæum come into contact: of imperforate or septate duodenum just above the bile-papilla—"the region where the diverticulum issues to form the liver and pancreas," and, "lastly, imperforate ileum occurs in the region where the primitive alimentary canal is in communication with the yolk-sac by means of the vitelline duct."

This author, in the last edition[9] of his well-known work on Tumours (1911), writes—"These curious defects are attributable to the influence of the vitello-intestinal duct, because they always occur in that portion of the ileum to which the duct, when persistent, is attached—that is, they do not occur within 30 cm. of the ileo-cæcal valve, and are rarely found at a greater distance than 1 metre from the cæcum."

Bland-Sutton's theory has much to recommend it, and it offers a feasible explanation of the majority of cases of ileal occlusion, in which, as I have already pointed out (see Gärtner's figures, quoted above), the malformation is situated in the lower part of the bowel. Its weak point, however, is that it fails to explain those cases in which the occlusion occurs close to the ileo-cæcal valve (*e.g.*, specimen 4, in my series), or those in which there are multiple occlusions, or, lastly, those in which there is occlusion situated high up in the small intestine.

(*c*) Clogg[10] reported in 1904 a case in which Ahlfeld's theory is supported. Referring to the etiology of congenital intestinal atresia, Clogg supports the embryological view. The vitelline duct may undergo excessive obliteration, or it may persist for an abnormal length of time and make traction on the growing of the bowel. Lastly, bowel so kept out may be snared by the umbilical ring. He rather inclines to snaring of bowel in an umbilical sac, with or without subsequent retraction within the abdomen.

(*d*) Forssner,[11] in a lengthy paper on congenital atresias of bowel and œsophagus, expresses (p. 135) the opinion that *epithelial occlusion*, shown by Tandler to occur normally in the duodenum, may *exceptionally* occur in all parts of the gut. This, followed by ingrowth of mesenchyme, will account for occlusions, single or multiple, in parts of the bowel unconnected with the vitelline duct. He considers that while this theory is applicable to some of the atresias of the jejuno-ileum, others are explicable by Ahlfeld's theory.

With considerable ingenuity Forssner shows, by means of diagrams, how the various forms (septum, blind ends, &c.) of malformation may be brought about after the mesenchymal ingrowth has taken place.

(*e*) Spriggs,[12] writing in 1910, expresses the opinion that no one theory will cover all cases. He considers that the majority are due to errors of development; others to fœtal accidents (volvuli, torsions, or strangulations), and a minority to precedent peritonitis.

2. *Fœtal peritonitis as a cause of occlusion.*

There has been a good deal of discussion as to the *rôle* played by fœtal peritonitis in the etiology of congenital occlusion. Ballantyne (*loc. cit.*, p. 533) does not actually refuse to admit it as a cause, "but," as he says, "there are difficulties in the way, for, in order to explain some of the reported cases, it must be supposed that the peritonitis is developed at a very early date in antenatal life, at a time, in fact, when it is not easy to understand how an inflammation can exist." Then, again, as already mentioned (*vide supra*, p. 31), Spriggs reminds us that the obstruction may be the *cause* of slight signs of localised peritonitis, although he is of opinion that in a minority of cases peritonitis is the cause of the intestinal lesion. Forssner (*loc. cit.*, p. 129) does not favour peritonitis as a cause. He thinks it improbable that a peritonitis can disappear and leave no traces beyond a circumscribed atresia of gut; and, further, he can not reconcile the peritonitis view with the fact that the parts of the gut-wall which are nearest to the peritoneum are unaltered, while the innermost layer of the wall—the epithelium—is the seat of the pathological process.

These opinions notwithstanding, I do not feel that we are justified in excluding peritonitis from the category of causal factors. In my paper already referred to (*vide supra*, p. 108) I have quoted the cases of W. Thomas [13] and J. Thomson [14] as examples of peritonitis causing occlusion, and in one of the cases in the present series (specimen 3) there can, I think, be no doubt of the occurrence. In another case (specimen 1) various adhesions were present, but did not seem at all to bear a close relationship to the occlusion, to which, indeed, they were evidently secondary.

3. *Volvulus.*

This would seem not to have been frequently observed, and it does not occupy a prominent place in the literature. It occurred in one of my cases (specimen 1), but it evidently had no causal relationship to the seat of the occlusion, from which it was quite distant. I am inclined in this case to view it as secondary to the occlusion, and immediately caused by the overloaded and unwieldy gut proximal to the occlusion.

(*e*) *Note on the muscularis.*

In specimen 2 (*vide supra*, p. 95) mention was made of defect in the muscularis. The *circular bundles* stopped short of the stenosed gut, which was in direct continuity with the dilated gut above. The *longitudinal* coat on the convexity was continued to the termination of the stenosed gut, but on the concavity it ceased on the proximal limb of the "spur," just short of the point where the circular bundles terminated.

A similar defect was observed in the sections of the bowel coiled up to form the "conical mass" (*vide supra*, p. 96). The circular bundles were represented only by traces here and there, and in none of the sections of the gut was the longitudinal coat present in more than half of the circumference.

In specimens 3 (p. 100) and 4 (p. 103) this deficiency of circular muscularis was also met with.

In specimen 1 (p. 93) there was deficiency of *longitudinal* muscle of non-distended gut where the latter joined the distended bowel. The muscularis of the distended bowel was so sparse that it could not be determined whether it represented either or both layers.

It is difficult to account for this defect of muscularis. It is in contradiction to Forssner's statement, just quoted, that in congenital occlusion the epithelium is the seat of the pathological process. At the same time, the higher degree of deficiency in the circular muscular coat shows that the inner coats of the bowel suffer more than the outer layers. This is quite consistent with the theory that the occlusion is brought about by pressure from without—either by Forssner's ingrowth of mesenchyme or by the contraction of post-peritonitic scar-tissue—and is analogous to what may occur in strangulated hernia. In the latter lesion it is well known that the pressure exercised on the bowel-wall by the strangulating agent exerts a more marked effect on the mucous membrane than on the external layers (Sultan,[15] Coley[16]). It would seem that the obliteration, or, in the case of strangulated hernia, the ulceration, begins and is most marked at the *periphery of the circulation*, and extends thence in a central direction.

(*f*) *Condition of the gut distal to the occlusion.*

Spriggs (*loc. cit.*) has drawn attention to the difference between the distal gut in congenital obstruction and that in acquired obstruction. In the former it is "not merely collapsed but firmly contracted up, having never functionated." The microscopic appearances of the distal gut in specimen 1 showed that the gut was of normal structure, reduced in size. They indicated that the contracted state of the gut was not caused by an active contraction of the muscularis: they pointed rather to a *want of growth.*

(*g*) *Obstruction without structural malformation.*

In considering the "nature of the malformation" (*vide supra*, p. 106) I purposely left out of account specimens 5 and 6. These two specimens did not represent any *structural* malformation. In specimen 5 (*vide supra*, p. 103) the non-distended ileum possessed a normal structure, but *in miniature*, and the appearance indicated a want of growth rather than of development. The contents consisted of inspissated mucus, and it is probable that this acted as an obstruction to the onward flow of meconium. The obstruction had originally formed in, or had extended up to, the upper third of the ileum. That it had been partially overcome was shown by the *gradual* diminution in size from the greatly dilated upper part of the bowel to the point (28 cm. above the ileo-cæcal junction) where firmly-contracted gut began.

A similar condition, but with its upper limit in the lower end of the ileum, existed in specimen 6, but in this case attempts at forcible dilatation from below had resulted in laceration of the colon.

Pearce Gould,[17] in 1882, reported to the Clinical Society of London a case in which "the cæcum, the lower 4 inches of the ileum, and the first 4 inches of the colon were filled with a firm whitish plug of inspissated mucus of the consistence of cheese." The plug was not adherent to mucous membrane, but tailed off at each end into ordinary mucus, and at its upper end it was greenish in colour and softer in consistence than the rest. The wall of the lower end of the ileum showed, on microscopic examination, a normal structure. In the colon beyond the plug were found several masses of milk-white, firm mucus. Below this the colon and rectum were empty, and contracted to the size of a clay tobacco-pipe stem.

Mr. Gould pointed out that there had been no fault in development, but obstruction from a plug which had probably been deposited sometime in the third month, before any bile had passed into the duodenum.

I must confess that the exact nature of cases like these is very obscure. There does not seem to be any answer to the question as to why an inspissated plug should be formed. The condition of the contracted bowel agrees so closely with that seen distal to a structural obstruction that it is extremely probable that the plug of mucus acts as an obstructing agent. That such inspissated mucus may be partially moved onwards by the pressure of meconium in the bowel above is shown in the first of my two specimens.

Remarks on Specimens 1 to 4.

In this small series of specimens we have examples of the different forms in which congenital occlusion of the bowel is met with.

Specimen 1 is of simple construction as regards the occlusion, but it presents also volvulus and peritonitic adhesions. The volvulus has no direct causal relationship to the occluding septum. The twist is situated at the base of a loop of gut, near the apex of which the septum occurs, and the twisted loop comprises both over-distended proximal and non-distended distal bowel. The volvulus has not caused any obstruction of the lumen of the gut, but it may, by producing congestion of the mesenteric vessels, have increased the distension of the already distended piece of gut between it and the septum. There can be little doubt that the volvulus has been induced by movements of the overloaded and unwieldy portion of bowel proximal to the septum. Either from the pressure of meconium alone, or aided by congestion, peritonitis followed by adhesions has occurred in places in the distended bowel *after* the volvulus has placed it in its final position.

With regard to *causation*, the position of the septum does not militate against Forssner's theory. But the malformation has occurred within the region of attachment of the vitelline duct in the embryo, and it is reasonable to attribute its formation to abnormality in the closure of the latter.

In specimen 2 we have to deal with multiple interruptions. Their multiplicity and high situation characterise a condition which can hardly be attributable to anomaly in the closure of the vitelline duct. In this specimen the condition of the coiled-up non-distended bowel points, at anyrate, to a localised peritonitis, and in my opinion we are quite justified in attributing to the *peritonitis* an etiological *rôle*. The defect in the muscularis is comparable with that found in specimen 3.

In specimen 3 the presence of a *post-peritonitic* band gives us a very clear indication of the etiology. The presence of a "pit" at the apex of the distended gut is interesting. It might be looked upon as a weakness of the wall at the place where a band has cut through the bowel. While this may be, this portion of gut certainly bears no evident relationship to any such structure, and the "pit" may, I think, be looked upon as the result of great pressure by meconium. It would doubtless, had the child lived long enough, have ended in perforation. In this specimen, also, the greater deficiency of circular as compared with longitudinal muscularis, in the piece of gut closely related to the band, is to be noted.

Specimen 4 is an example of very marked stenosis, amounting practically to occlusion. The malformation is situated rather lower than the usual place of attachment of the vitelline duct. There are no signs of an old peritonitis, and the anatomical conformation of the mesentery and meso-appendix is normal. The presence during embryonic life of the vitelline duct in the near neighbourhood is undoubted, while Forssner himself (*loc. cit.*, p. 135) admits only that the occurrence of epithelial occlusion may *exceptionally* (ausnahmsweise) take place in parts of the bowel other than the cranial portion. While, therefore, the production of the malformation in this specimen seems to me to be explicable by either Bland-Sutton's or Forssner's theories, I am inclined for the reasons just given to favour the former.

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[2] Forssner, *Anatomische Hefte*, Wiesbaden, 1907; Band XXXIV, Heft 102.

[3] Silbermann, *Jahrbuch für Kinderheilkunde und Physische Erziehung*, N.F., Band XVIII, S. 420 *et seq.*, Leipzig, 1882.

[4] Gärtner, *Ibid.*, Band XX, S. 403 *et seq.*, 1883.

[5] Bland-Sutton, *International Journal of the Medical Sciences*, 1889, N.S., vol. xcviii, p. 457.

[6] Ballantyne, *Manual of Antenatal Pathology and Hygiene—The Embryo*, Edinburgh, 1904, p. 533.

[7] Edington, *British Journal of Children's Diseases*, February, 1906.

[8] Ahlfeld, *Arch. f. Gyn.*, Band V, 1873, p. 230 (quoted by Forssner, *loc. cit.*, p. 125).

[9] Bland-Sutton, *Tumours*, fifth edition, London, 1911, p. 598.

[10] Clogg, *Lancet*, 1904, vol. ii, pp. 1770-1774.

[11] Forssner, *loc. cit.*

[12] Spriggs, *Lancet*, 1910, vol. i, p. 94.

[13] W. Thomas, *British Medical Journal*, 1886, vol. ii, p. 925.

[14] Thomson, *Edinburgh Medical Journal*, 1892, vol. xxxvii, p. 840.

[15] Sultan, *Atlas and Epitome of Abdominal Hernias*, London, 1902, p. 88.

[16] Coley, Article on "Hernia" in *Keen's Surgery*, vol. iv., London, 1908, p. 43.

[17] Pearce Gould, *Lancet*, 1882, vol. i, p. 738; *Clin. Society's Transactions*, 1882, vol. xv, p. 192.

CONCLUSIONS.

A. Œsophagus.

1. It is highly probable that imperforate pharynx is due to abnormal relationship of the tracheo-œsophageal ridges to the posterior (dorsal) wall of the fore-gut.

2. The abnormal relationship consists probably in the ridges being placed obliquely.

3. Should a partition exist below the tracheo-œsophageal fistula there is reason to believe that the ridges have been formed in two parts, of which the upper have been obliquely placed.

4. The lower ends of the obliquely-placed ridges having come in contact with the posterior wall of the fore-gut, a permanent union results, shutting off the upper from the lower segment of the œsophagus.

5. Meconium may be found in the bowel.

B. Duodenum.

6. There is frequently a close relationship between a duodenal occlusion and the point of entry of the bile and pancreatic ducts.

7. Occlusion without relationship to the ducts may occur.

8. While the former class may be related to the development of the biliary and pancreatic apparatus, both classes may result from the epithelial occlusion which normally occurs in the course of development of the duodenum.

9. A duodenal septum, although causing an actual obstruction, may be the seat of a microscopic channel connecting the lumen above with that below the septum.

10. Such a channel has been erroneously looked upon as an abnormality of the ducts.

11. Abnormal disposition of the pancreas may accompany duodenal septum.

C. Ileum.

12. Occlusion of the ileum is usually caused by structural malformation (septum, &c.).

13. The malformation has a wide range of situation—from high up in the ileum to its lower end.

14. There may be no structural malformation, in which case obstruction is produced by a plug of mucus.

15. As regards etiology, in 2 of my cases peritonitis was the causal factor; in 2 the cause was embryological—probably related to obliteration of the vitelline duct; in the remaining 2 no cause could be suggested for the mucous obstruction.

16. In 3 cases there was deficiency of circular muscularis—marked when compared with the longitudinal layer.

17. This deficiency is in keeping with the view that the occlusion of the bowel was produced by *pressure acting from without inwards.*

18. The gut distal to the obstruction is not merely empty, but unexpanded. Its structure is normal, but in miniature.

APPENDIX.

Summaries of cases from which specimens obtained.

CASE I.—Male, premature (6½ months), stillborn. Atresia ani; transposition of viscera; *imperforate pharynx* (p. 17); *duodenal septa* (p. 23).

CASE II.—Female, aged 6 days. *Obstruction of ileum by septum* (p. 90); secondary volvulus and peritonitis; otherwise normal.

CASE III.—Female, aged 4 days. *Multiple occlusions of ileum, high up* (p. 94); otherwise normal.

CASE IV.—Female, aged 4 days. *Multiple occlusions of ileum, high up,* associated with omental band (p. 97); otherwise normal.

CASE V.—Siren fœtus. No trace of external genitals or of anus; *occlusion lower end of ileum* (p. 102); blind ends of bowel joined by cord, partly hollow; large bowel represented by ascending colon only.

CASE VI.—Male, aged 3 days. No structural obstruction, but *gradual narrowing down of ileum;* lower ileum and colon non-expanded (p. 103); no other abnormality.

CASE VII.—Male, aged 3 days. Distension of abdomen; gas and fluid in peritoneal cavity; *colon and lower ileum not properly expanded* (p. 104); laceration of colon near hepatic flexure; plug of inspissated mucus.

CASE VIII.—Male, full-time, dying immediately after birth. No trace of anus; scrotum empty; belly protuberant; atresia recti, and microscopic communication with urinary bladder; micro-urethra; distension of bladder and prostatic urethra;

diverticulum of base of bladder: absence of prostate; irregular termination of vasa deferentia: *imperforate pharynx* (p. 17): malformed limbs.

Note.—The above investigation was carried out as a Research Student in the Embryology Laboratory of the University of Glasgow. The author is much indebted to Dr. J. F. Gemmill for much friendly help and suggestion.

Obituary.

ALEXANDER RAE, M.B., CH.B. GLASG.

WE regret to announce the death, which took place suddenly at Midhurst, Sussex, on 4th July, of Dr. Alexander Rae. Dr. Rae, who was the elder son of Mr. Thomas Rae, Raeburn, Hamilton, studied medicine at the University of Glasgow, graduating M.B., Ch.B., in 1912.

SURGEON-LIEUT.-COLONEL HORACE PARR YELD, I.M.S. (RETIRED), LATE OF BENGAL MEDICAL SERVICE.

SURGEON-LIEUT.-COLONEL HORACE PARR YELD, late of the Bengal Medical Service, died at Harrogate on 21st June. He was born on 11th September, 1847, educated at Glasgow University, took the diplomas of L.R.C.S. and L.R.C.P. at Edinburgh in 1870, and entered the I.M.S. as Surgeon on 31st March, 1874. He became Surgeon-Major on 31st March, 1886, Surgeon-Lieut.-Colonel on 31st March, 1894, and retired on 15th November, 1894. His first ten years' service were spent in military employment, during which he served in the Afghan war, in 1879, with the Thal Chotiali and Vitakri Field Force, receiving the medal. In 1884 he joined the Assay Department, and held the post of Deputy Assay Master of the Calcutta and Bombay Mints successively during the next ten years.

CURRENT TOPICS.

State Insurance: Royal Faculty of Physicians and Surgeons and Amendment Bill.—The following letter has been sent by the Royal Faculty of Physicians and Surgeons in Glasgow to the Prime Minister on the subject of the amendment of the National Insurance Act:—

Sir,—I am requested, as President of the Royal Faculty of Physicians and Surgeons of Glasgow, to send you the following resolution, which was adopted by the Royal Faculty at their monthly meeting held on the 7th curt., viz.:—

That the Royal Faculty of Physicians and Surgeons is of opinion that in connection with the forthcoming bill to amend the National Health Insurance Act, the Government should invite the opinion of the Royal Medical and Surgical Corporations as to the amendments, if any, relating to the medical sections of the Act, which would ensure efficient medical and surgical work amongst insured persons, and that this be a representation to the Government and Parliament.

I trust that this matter will receive the favourable consideration of His Majesty's Government.—I am, etc.,

Jas. A. Adams, *President.*

A copy of the letter has been sent to Members of Parliament.

Honour for Sir Donald MacAlister, K.C.B.—At the graduation ceremony of the Queen's University of Belfast, held in the Ulster Hall on 9th ult., the honorary degree of LL.D. was conferred on, amongst others, Principal Sir Donald MacAlister, K.C.B. The Principal was named in the Irish Universities Act, 1908, as one of the Belfast Commissioners for the purpose of making the Statutes, appointing the professors and lecturers, and settling the financial conditions of the new Queen's University. He became chairman of the Commission by direct appointment of His Majesty the King on the death of His Honour Judge Shaw, K.C., pro-Chancellor of the University, in 1910.

Sir Donald MacAlister is already an honorary graduate of the Universities of Glasgow, Aberdeen, St. Andrews, Durham, Liverpool, Bristol, Montreal, Toronto, and Athens, and we offer him our congratulations on the honour which he has just received from Belfast.

GLASGOW ROYAL INFIRMARY: AUTUMN POST-GRADUATE CLASSES.—We have just received the syllabus of the post-graduate classes to be held during September at the Royal Infirmary. The programme includes clinical medicine, surgery, and gynæcology, ophthalmology, diseases of the ear, skin, and nose and throat, electro-therapeutics, &c. The syllabus gives information as to courses and fees, and is furnished with a time-table, showing at a glance the dates and hours of the various classes. Copies may be had on application to Dr. Thom, Medical Superintendent, Royal Infirmary.

WESTERN INFIRMARY POST-GRADUATE COURSE.—A post-graduate course of instruction by several members of the staff will be given in the Western Infirmary during the month of September. The meetings will take place at the morning visiting hour, and special attention will be directed to digestive disturbances, nervous diseases, gall-bladder disease, and the surgery of general practice. There will also be a course on dermatology and another on clinical pathology. The courses are free to those who are life members of the hospital; to others, a fee of two guineas is chargeable. For particulars, apply to the Superintendent of the Infirmary (Dr. D. J. Mackintosh, M.V.O.).

WESTERN INFIRMARY NURSING PRIZE.—Sir George T. Beatson, M.D., K.C.B., on the occasion of his retirement from the position of Visiting Surgeon at the Western Infirmary, Glasgow, has written a letter to the Managers of the Infirmary, in the course of which he says:—"I desire also to say how conscious I am of my professional indebtedness to the Infirmary, and of the valuable lessons I have learned there. I should like to indicate this in a small way, and as I know how much every member of the medical and surgical staff is dependent on the skill and efficiency of the nurses of the institution, and as personally I have been most ably served by them, I would ask to be allowed to establish an annual nursing prize of the value of £5 to be awarded to the best nurse in each year, and be known as 'The Florence Nightingale Prize—Glasgow Western Infirmary.'"

The form which Sir George Beatson's recognition of his indebtedness to the Infirmary has taken is peculiarly appropriate in view of his connection with the ambulance movement in Scotland. The designation of the prize, also, recalls the family and personal connection of the donor with the Army Medical Service. But a prize such as this does far more. It will stimulate the nurses of the Infirmary to still further exertions, and this will tend to raise even higher the standard which they have already attained. Ultimately this will be felt by the sick who are placed under their care. Sir George is to be congratulated on his happy thought.

Appointment.—G. H. Edington, M.D.Glasg. (M.B. 1891), D.Sc., F.R.F.P.S.G., has been appointed Visiting Surgeon to the Western Infirmary, *vice* Sir G. T. Beatson, K.C.B., M.D., retired.

Medical Officership at Peterhead Prison. — The Secretary for Scotland has been pleased to appoint Dr. H. Ferguson Watson, Glasgow, to be Medical Officer of Peterhead Prison, in succession to Dr. William H. M'Walter, transferred to Duke Street Prison, Glasgow.

R.A.M.C. (Territorial Force).—*Officers' Decoration:* The King has conferred the Territorial Force Officers' Decoration upon, amongst others, Major John Barr Stevens, M.B., of Renfrew, attached to the 6th (Renfrewshire) Battalion (Princess Louise's) Argyll and Sutherland Highlanders.

Promotion examination: Major Brownlow Riddell, Registrar, 3rd Scottish General Hospital, has passed Examination D, qualifying for promotion to rank of Lieutenant-Colonel.

R.A.M.C. Entrance Examination.—An examination of candidates for commissions in the Royal Army Medical Corps was held in London on 23rd ult. It was announced in the advertisements which appeared in the daily press that in consequence of the reduction of the garrison in South Africa it was improbable that more than five commissions would be available. This is a fourth of the number usually available, and the reduction has caused some anxiety to candidates. We are not in possession of information as to the number who presented themselves, but in view of the facts that nowadays the medical service of the army opens up a useful, honourable, and possibly a distinguished career, and that the examination is of an eminently practical nature, it was looked on as likely that there would be as keen competition as usual, with, as already stated, much fewer chances of gaining a place.

BRITISH HOSPITALS ASSOCIATION CONFERENCE AT OXFORD.—The annual conference of the British Hospitals Association was held in Oxford on 26th and 27th June, under the presidency of Professor Sir William Osler. Representatives of the London hospitals and the large provincial institutions attended to the number of about one hundred. The first morning was given over to a discussion on the effects upon hospitals of the Insurance Act. The debate showed that the experience of the various institutions in different parts of the country varied considerably, and in the end no resolution was submitted. On the second morning of the conference a discussion took place on the upkeep of hospitals, the subject being gone into in detail. One speaker pointed out that mistakes in planning might seriously affect the annual cost of maintenance of an hospital, and Sir Henry Burdett expressed the opinion that in order to avoid such mistakes there should be associated with the architect an expert hospital administrator. Sir William Osler, on being re-elected president of the association, pointed to the Peter Brigham Hospital in Boston as the realisation of a new ideal in hospitals in English-speaking countries. They would have to build hospitals on the lines of individual units, each one of which would be in charge of a single individual, with graded groups of assistants, and with laboratories and equipment ready to hand. There was no doubt that that was the plan on which doctors and workers would in future demand that hospitals should be constructed.

SIR WILLIAM OSLER ON VOLUNTARY HOSPITALS AND NURSING HOMES.—In the course of his presidential address at the conference of the British Hospitals Association, Sir William Osler contrasted the methods of Colonial and American hospitals with those of British hospitals. Referring to the voluntary system, he advised that it should be given up. "It is antiquated, and it is not going to continue." They must make up their minds to accept the principle of taking pay in the general hospitals. There was not a general hospital in the United States or Canada which did not take all the money it could get from all classes of patients. A striking contrast between the American hospitals and British hospitals was the fact that in England everything was done for the poor, who were rich in hospital care and treatment. In England they did nothing whatever for the poor rich, who were the most neglected people in the country. If John Hodge had acute appendicitis he was taken into a beautiful hospital, and operated upon in a splendid operating room with all modern advantages. He was put into a big airy ward, and spent his convalescence on a balcony surrounded by all the advantages hospital administration could give. What happened to "Lady Clara Vere de Vere?" When she had acute appendicitis she was taken to a stuffy house transformed into a nursing home, and operated upon in a back room transformed into an operating room. No wonder she hated doctors, nurses, and the medical profession. Such experiences had alienated very largely the upper classes from the profession of science and medicine. Many nursing homes were admirable and up to date, but many were not, and not one could take care of a patient as well as the general hospital. The Duchess of Connaught, in her recent illness in America, he mentioned, was taken to a general hospital, and he would like to see every general hospital with a private pavilion. They could be made to pay very well.

There is matter for reflection in Sir William Osler's address, and, no doubt, hospital authorities will give it their careful consideration. The matter of paying-patients is, we believe, actually being tried in some voluntary hospitals. But, so far as abolishing the voluntary system is concerned, any change will require long and anxious thought. It has to be borne in mind that transference to the State or Municipality would mean State or Municipal management. Whether such management would be as efficient as that obtaining at present under Boards of Directors is open to question; and the trouble would be that if the experiment were made and proved a failure it would be difficult, if not impossible, to revert to the voluntary system. We believe that in this matter of change the policy of "festina lente" is the only safe one to pursue.

INTERNATIONAL MEDICAL CONGRESS: HISTORICAL MEDICAL MUSEUM.—We have just received the *Handbook* of the Historical Medical Museum organised by Mr. Henry S. Wellcome. Mr. Wellcome conceived, some years ago, the idea of forming a museum of rare and curious objects of historical interest connected with medicine and the allied sciences, and, as so often happens in such cases, the proportions which the project has assumed have far exceeded his original intentions.

The *Handbook* is intended to serve as a descriptive guide only, and to indicate the chief features and objects exhibited in the museum. A glance at the index shows the visitor the general arrangement and grouping of the exhibits, and the plans with which the book is furnished will show him exactly where any special group in which he may be interested is to be found. It is hoped that a further and more complete record will be published at a later period.

The museum was formally opened on 24th June by Dr. Norman Moore, President of the Section of the History of Medicine in the International Congress of Medicine, to be held in London during the present month. In the course of his remarks Dr. Moore referred to the recent rise of museums, which are a development from libraries. He made mention of the collection of the Tradescants (father and son), Elias Ashmole, James Petiver, Sir Hans Sloane, Francis Calceolari, Edmund King, Woodward, and, lastly, John Hunter. The present museum is the first established in England to illustrate the history of medicine. After drawing attention to the main features of the collection, Dr. Moore concluded by expressing the opinion that its being due to the exertions of a private individual is a proper ground of pride for him and for the nation.

The meeting in London of the Seventeenth International Congress of Medicine has resulted in arrangements having been concluded whereby the museum will be officially connected with the Congress, and will form part of the Section of the History of Medicine. It is Mr. Wellcome's intention that the present collection shall form the nucleus of a permanent Historical Medical Museum in London.

RISE IN THE PRICE OF SOAP.—It has recently been announced in the daily press that, in consequence of the continuous advance in the cost of the raw materials of the soap industry, the price of soap to the consumer has gone up a halfpenny per pound.

A curious and interesting fact in connection with the advance is that the main competitor with the soapmaker in the raw material market is the margarine maker. Many of the fats and oils, which are the main basis of soap, used to be at the almost exclusive disposal of the soapmaker. To-day they are in demand for the delicacies of the table. The modern manufacturer of soap uses the best and purest animal fats and vegetable oils obtainable, but it is just these products that attract the margarine manufacturer because of their edible qualities, improved as they have recently been by the art of the chemist. Of late years the soapmaker has turned his attention in an increasing degree to the palm forests of the world, but here, also, the soapmaker is faced with the fact that the product of the oil-bearing palm is required for something else than making soap. It can, for instance, be made into butter far superior to any that can be made from the milk of the cow. All along the line of the soapmaker's oils and fats the food producer is in competition with him, and, as an example of the result, it may be noted that cocoanut and palm kernel oil have practically doubled in price within the last ten years. The same observation applies to many other of the raw materials used in the soap manufacture.

It is to be hoped that the increased cost of soap will not lessen the tendency towards greater attention to personal cleanliness which has been slowly growing of recent years. When it comes to be a question as between food and anything else, the latter is apt to have an uphill fight. We hope, however, that we are not too optimistic in believing that the daily tub has come to stay, and that nothing can oust it from the position of being one of the necessaries of life.

SANITARY DEPARTMENT METHODS IN CHICAGO.—The following is from the editorials in *Munsey's Magazine* for last month:—

"The 'clean-up' weeks recently instituted by various American communities were interesting and suggestive incidents. Chicago and New York took the lead in this wholesome house-cleaning, and with splendid results. In both of these great cities—and few communities accumulate more dirt—a whole week was set apart by the authorities for a special cleansing under the direction of the local health department. Chicago, in particular, did the job thoroughly. A booklet setting forth the plan of the crusade was widely distributed. On the back was a picture of a woman riding a broomstick. Underneath was the following quatrain:—

'Chicago, Chicago, Chicago,' quoth I,
'Whither, oh, whither, oh, whither, so spry?'
'To clean up the alleys and chase out the fly;
'Then I'll have fewer small coffins to buy!'

"But why have this civic house-cleaning only in the spring-time? Dirt is not seasonal. Like the poor it is with us always. To make it really effective, our cities will do well to make their crusade continuous. Then the clean-up idea will become a habit."

HOBBLES AND VEILS.—Though a few old ladies still cling to their skirts, with all who make any pretensions to be *dans l'train* it is clearly a case of *vice versa.* That woman should refuse to take the untrammelled step, which no mere man would grudge her, at the very moment when she is fighting to the death for political liberty, is perhaps remarkable. It indeed almost looks as if because she could go free she must insist on being hobbled. However, we have now to admit that our comic artists during the last three years have been most unhappily inspired, and that there has been method in our sisters' madness all the time, for the medical men of Chicago, after profoundly deliberating on the subject of tight skirts, gravely, and with a due sense of their own importance, have declared that the hobble is hygienic, artistic, and comfortable, and that it corrects bad walking. Pleated. wide, and long skirts are stigmatised by our American brethren as the worst germ-carriers ever invented; and at a full-dress debate doctors with the bacteriological imagination made their own and their colleagues' flesh creep, as they pictured the fond but unthinking mother switching up in her train outside what might spell pestilence and death to all in the happy home. Much of which is doubtless quite true, but it cannot be supposed to change the habits of a real daughter of Eve unsophisticated in microbes. The casting aside of these anachronistic garments has in great part been due to fickle fashion, the emancipation of woman, and her devotion to athletics. Nevertheless, we would like to think that the medical profession, by its teaching about the deadliness of dirt and dust, has quickened the sense of niceness and particularity amongst the people, and thus aided the advent of the "kilted coat." But, though what was good enough for our fathers and mothers is certainly not good enough for us, we do not believe that the driving force behind the hobble has been the mysterious pathogenic germ that not one woman in a thousand has seen or can materialise. That the long skirt for out-door wear has gone for good is, we think, unquestionable, and, though it may still continue to be *de rigueur* on state occasions, we feel certain that, after this bold display of feet to which all are now thoroughly hardened, it will never again be possible for the poet to excite approving thrills in sentimental man with such delightfully cadenced nonsense as—

"Her feet beneath her petticoat,
Like little mice, stole in and out,
As if they feared the light";[1]

and

"Her pretty feet
Like snailes did creep
A little out, and then,
As if they started at Bo-Beep,
Did soon draw in agen."[2]

Such a prophecy about feminine modes, however, almost suggests a total disregard of historical fact, for we are told by our lady friends that the present day fashions approximate most closely to those of the Directoire (1795-9). Moreover, it sometime ago came to our knowledge that a prominent suffragist, attired in ordinary twentieth century costume and without any making up—her hat pins being as lethal as any large sheath-knife in the Palais Royal—finds no difficulty in masquerading at fancy dress balls as Charlotte Corday. With an army of "angelic-dæmonic" citoyennes on active service need we marvel that tubbing is not rampant, and that many a good man who knows better, as was lately bewailed in these pages, has perforce to limit his ablutions to *se mettre le nez dans l'eau*. How all-pervading is the influence of clothes!

But the hobble goes much further back than the French Revolution. Mural decorations and statues show that with the ancient Egyptians very tight skirts were the vogue. And in the palmy days of Greece and Rome there were designed and worn graceful clinging draperies, which later served as models for Directoire and Empire creations. The twelfth and thirteenth centuries also saw rational revivals, which, however, were soon epitaphed with—

"For O, for O, the hobble is forgot."

Dress ran riot in both latitude and longitude. Fashion demanded what was ugly, cumbrous, and insanitary; and in the fourteenth century, despite the treatise of a learned divine "contra caudas dominarum," and Chaucer's animadversions on women's gowns "trailyng in the dong and in the myre," matters had come to such a pass that a Papal legate in Germany thought it necessary to issue the following—unsatisfactory and inconclusive—mandate: "Velamina etiam mulierum, quae *ad verecundiam designandem* eis sunt concessa, sed nunc per insipientiam earum in lasciviam et luxuriam excreverunt, et *immoderata longitudo superpelliciorum, quibus pulverem trahunt*, ad moderatum usum, *sicut decet verecundiam sexûs*, per excommunicationis cohibeantur."[1] And a century or more later, in "A General Satyre," written by Sir James Inglis or by William Dunbar sometime between 1503 and 1513, the poet rails against the enormity of long trains, which were an offence under a Statute of James II—"that na woman wear tailes unfit in length."

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[1] Suckling (1609-42), "Ballad upon a Wedding."

[2] Herrick, *Hesperides*, canto 526, 1648.

> "Sic farthingallis on flaggis als fatt as quhailis,
> Facit lyk fulis with hattis that littill availlis;
> And sic fowill taillis to sweip the calsay clene,
> The dust upskaillis, mony fillok with luve saillis,
> Within this land was never hard nor sene."

What effects followed from the above threat of excommunication is unknown, but most assuredly the Scottish Act of Parliament and Dunbar's (?) strictures against "fowill taillis" were of "littill availl," for in 1538, during the reign of James V, there appeared "Ane supplicatioun directit from Schir David Lyndesay of the Mont, Knicht, to the Kingis Grace, in contemptioun of syde taillis." This broadly humorous, if somewhat tedious rhymester, in his "ain brief toung," thus satirises woman's sartorial sins, not, as may be seen, without marked indebtedness to the earlier poem; and incidentally shakes our faith in the permanence of the present hygienic reformation, as he graphically depicts those gruesome atrocities with which till recently we were only too familiar:—

. . . .

> "Quhare ever thay go, it may be sene,
> How kirk, and calsay, thay soup clene;

. . . .

> In burrowis, wantoun burges wyiffis,
> Quha may have sydest taillis stryiffis,
> Weill bordourit with velvoit fyne;
> Bot following thame it is ane pyne,

---

[1] Also the garments of women, permitted originally as a concession to propriety, but now through folly grown out into wantonness and extravagance and a boundless length of skirt that sweeps the dust, must, on pain of excommunication, be confined to such a length as is seemly for the modesty of the sex.

In somer quhen the streittis dryis,
Thay rais the dust abone the skyis;
None may ga neir thame at thair ais,
Without thay cover mouth and neis,
Frome the powder to keip thair ene,
Considder gif thair cloiffis be clene.

. . . .

I wald thae Borrowstounis barnis had breikkis,
To keep sic mist fra malkinnis cheikkis;

. . . .

I think maist pane after ane rane,
To se thame towkit up agane;
Than, quhen thay step furth throw the streit,
Thair faldings flappis about thair feit,
Thair laithlie lyning furthwart flypit,
Quhilk hes the muk and midding wypit;

. . . .

Wemen will say this is no bourdis,
To wryte sick vyle and filthy wordis;
Bot wald thay clenge thair filthy taillis,
Quhilk ouir the myris and middings trailles,
Than suld my wryting clengit be,
None other mendis thay get of me;

. . . .

Quod Lyndesay, in contempt of the syde taillis,
That duddrounis, and duntibouris throw
the dubbis traillis."

In his "Monarchies," Lyndesay [1] again returns to the charge, "arraigning the *ladyis* with a sort of profane mixture of seriousness and levity at the judgment-seat of final retribution." And though the Statute failed, the satirical rogue must have "clapped i' the clout," because amendment followed, but for how long we know not, as is evidenced by the subjoined extract from the Elizabethan comedy of "Eastward Hoe." In Act I Mildred says to Poldavy, a French tailor, who enters with a Scottish farthingale and a French fall in his arms—

> "Tailor Poldavy, prythee fit, fit it. Is this a right Scot? Does it clip close? and bear up round?"

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[1] In *Marmion* Sir Walter Scott declares of the Lyon Herald, with conscious, or unconscious, irony—

> "From his steed's shoulder, loin, and breast,
> Silk housings swept the ground."

We regret to observe how prevalent just now is the fashion of wearing veils, in favour of which not a single good word can be said, and whose only purpose is that so severely reprobated by the Lord Hamlet. The heavily patterned varieties especially are bad for the eyes, and they seriously interfere with the intake of fresh and the output of contaminated air. Here, as in the case of long tails, we see the futility of legislation. The second line in the verse quoted from "A General Satyre" is supposed to allude to the misdemeanour, provided against in a Statute of Act 70, James II—"That no woman cum to kirk nor mercat with her face mussaled or covered, that scho may not be kent, under the pane of escheit of the churchie." Notwithstanding this Act of Parliament our sisters continued "mussaled," and even the desperate remedy of poetry, as droned by James' Lyon King-at-Arms, has so far been equally inefficacious. The outlook, we admit, is anything but promising. Nevertheless we have hopes that, since the ladies have listened to the rhyme of the ancient sanitarian about "cutting thair gownis," they will yet hearken to reason and "schaw thair face," and thus do grace to themselves and ease to the ghost of Lyndesay, who, if he has kept his word, in the dead vast and middle of the night is "flyting" still.

LITERARY INTELLIGENCE.—Practitioners of medicine will be interested to learn that Dr. Léon Blanc and Dr. H. de Mérac have translated into English Dr. Albert Robin's *Treatment of Tuberculosis.* The work will be published by Messrs. J. & A. Churchill, 7 Great Marlborough Street, London, W. The same publishers have nearly ready an English translation of the Italian work, *A Treatise on General and Industrial Organic Chemistry*, by Dr. Ettore Molinari. The work of translation has been carried out by Mr. T. H. Pope, of the University of Birmingham. The text contains 500 illustrations. They will also publish a new and revised edition (sixth) of *Surgical Pathology*, by Sir Anthony A. Bowlby, C.M.G., and Dr. F. W. Andrewes.

Messrs. Smith, Elder & Co. recently published a work by Dr. W. McC. Wanklyn, who was formerly Medical Superintendent of the Small-pox Receiving Stations and River Ambulance Service of the Metropolitan Asylums Board, and is now an Assistant Medical Officer of the London County Council, entitled *How to Diagnose Small-pox.* The work is based on an experience of small-pox extending over twenty years, and including the revision of the diagnosis of upwards of 10,000 cases. It is intended for the busy practitioner and those who are not well versed in this disease. It is written in a clear and easy style, and deals with the subject in a practical manner. The work should be of special assistance in removing the doubts and difficulties which surround this thorny subject.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.

SESSION 1912-1913.

MEETING VI.—20TH DECEMBER, 1912.

The President, DR. A. FREELAND FERGUS, *in the Chair.*

This meeting was held in the Glasgow Royal Asylum, Gartnavel, where a Clinical and Pathological Demonstration was given by members of the staff.

I.—DEMENTIA PRECOX.

BY DR. L. R. OSWALD.

[ABSTRACT.]

Dr. Oswald spoke of the uncritical eagerness there had been to accept the views of Kræpelin, pointing out that Morel had first described a somewhat similar condition, giving to it the name of chronic mental confusion; that Kraepelin's conclusions were not accepted by many well-known alienists, and that criticism was frequently made that dementia precox was not a disease entity, but a mere collection of different things which happen during adolescence.

There were, however, a large number of the insane with a somewhat similar history, beginning at any time prior to the period of full development, with mental precocity, often marked brilliancy at school, lack or perversion of the social instinct, followed by delusions and other symptoms, and finally by dementia. He thought the term dementia precox was of great value as bringing under the same term a large number of morbid mental states having this common symptom that they tend to an early dementia. After referring to the adolescent insanity of Clouston, and contrasting it with dementia precox, he spoke of the causes of the condition, expressing the view that the great majority of cases occurring prior to full development depend on pre-natal causes, either hereditary or arising during intra-uterine life. He referred to the intensity of the disease process, which showed great variation, illustrating three types of the disease in the patients afterwards shown to the Society.

As to the etiology of the condition, he had little to say. Trauma appeared to be frequently an exciting cause, and he gave in detail the symptoms of two such cases, one a student and the other a cook. The prognosis was always unfavourable, and if he diagnosed a case as one of dementia precox, and a complete recovery took place, he would revise his diagnosis. The condition might be confused with others, such as the psychoses of exhaustion occurring about the same time of life, and often time must elapse before a definite opinion could be given.

While the prognosis as regards complete recovery was always bad, apparent recoveries did occur, and frequently great improvement took place, and there only remained some "blurring of the mirror of the mind." He was unable to offer any adequate explanation (1) as to why the resulting dementia varied so greatly, and (2) as to what was the nature of the causes at work in different cases.

The only normal dementia was that of old age, and to be logical there must be included in the category of dementia precox all other cases of dementia occurring prior to the pre-senile period.

As to treatment, he had not much to say. It was largely one of symptoms. It seemed possible in some cases by a re-arrangement of the patient's life to delay the disease, to mitigate its severity, and to modify the resulting dementia.

Dr. Oswald afterwards showed a number of cases illustrating the paranoid, hebephrenic, and katanoid types of the condition.

II.—THE DIFFERENTIAL DIAGNOSIS OF DEMENTIA PRECOX FROM MANIAC-DEPRESSIVE INSANITY.

By Dr. R. M. Marshall.

This paper will appear in full in a subsequent issue of the *Glasgow Medical Journal.*

III.—THE EYES IN DEMENTIA PRECOX.

By Dr. F. Murchie.

[Abstract.]

Dr. Murchie said that the eyes of a number of patients believed to be suffering from dementia precox had been examined, along with a number of patients suffering from other varieties of insanity, to act as control cases. It was found that no reliance could be placed on subjective symptoms owing to the mental state of the patients. The results of objective examination were as follows:—The size of the pupil was, as a rule, somewhat larger than normal, and in two cases irregularity in outline was noticed, the pupil being placed excentrically. The reaction to light was invariably present, seldom brisk, and, as a rule, slow. Corneal sensibility was usually diminished, in some cases markedly so. Psychical reflexes appeared to be disturbed in about the same proportion of cases as the reflex to sensory stimulation or so-called ciliospinal reflex. The latter was found normal in 18 per cent of cases, sluggish in 20 per cent, and absent in 62 per cent. This phenomenon pointed to a definite pathological process, and was of the greatest value in diagnosis, as apart from dementia precox it was rare. The lesion was probably situated in the long ciliary nerves. Of equal diagnostic value were the changes found in the fundi. A practically constant feature was a fulness of the veins, amounting in several cases to marked dilatation and tortuosity. Associated with this there was in many cases a contraction of the arteries. Alterations in the disc were common but varied greatly, including pallor, congestion, and a mixed condition with the nasal half of the disc congested and the temporal half pale. Usually the condition was similar in both eyes, but in some cases the change was more marked in one or other fundus. All the changes observed were to be found in other conditions giving rise to papillitis, *e.g.*, brain tumours, meningitis, syphilis, acute febrile diseases, chronic intestinal toxæmia, and lead poisoning. In the case of brain tumour the hyperæmia and œdema were due to pressure; in the others the causes were recognised as infections, and it was justifiable to assume that the similar changes in dementia precox were brought about by a toxin. While the differential diagnosis of dementia precox could not yet be made on the ocular changes alone, the observation of these changes in the pupils and fundi of a patient with vague nervous and mental symptoms might assist in arriving at a diagnosis.

IV.—DEMENTIA PRECOX AND GENERAL PARALYSIS: A COMPARISON AND CONTRAST.

By Dr. Ivy M'Kenzie.

The following is a synopsis of Dr. M'Kenzie's communication:—

1. The irreparable damage to brain tissue in both diseases. The somatic evidences of disease in both.

2. The transient character of the influences producing brain degeneration in dementia precox: the slow, persistent character of the changes in general paralysis.

3. General paralysis, a general cerebro-spinal ataxia; dementia precox, an ataxia more or less confined to the higher psychical areas.

Meeting VII.—17th January, 1913.

Dr. J. Crawford Renton *in the Chair.*

I.—PATHOLOGICAL PREPARATIONS FROM A CASE OF EXOPHTHALMIC GOITRE.

By Dr. Ivy M'Kenzie.

The case was that of a woman, aged 40, the subject of recurrent insanity, who died in Gartnavel Royal Asylum.

There were present during life leukoderma and bronzing of the skin, suggestive of Addison's disease; marked auriculo-ventricular tachycardia (200 to 230 per minute), and auricular fibrillation; enlargement of the thyroid and slight exophthalmos, suggestive of Basedow's disease; and, three days before death, a hemiparesis.

Post-mortem examination showed marked hypertrophy of the heart, which weighed 18 oz.; great excess of the medullary substance of the adrenals, and enormous increase in pigment; well-marked pigmentary degeneration of the abdominal and cervical sympathetic ganglia; and in the thyroid, the general appearances characteristic of exophthalmic goitre, viz., those indicative of excessive functional activity.

The case illustrated the interconnection between the suprarenals and the thyroid. It was believed that they acted through the sympathetic system as intermediary.

II.—PATHOLOGICAL PREPARATIONS FROM TWO CASES OF NECROSIS OF THE PANCREAS AND SMALL INTESTINE.

By Dr. Ivy M'Kenzie.

The first case was that of a man, aged 40, a dement, who three months before death suffered from enormous distension of the abdomen, which came on suddenly and passed off also suddenly. Three months later he became ill again with abdominal symptoms, including tympanites and fæcal vomiting, and died suddenly.

Post-mortem, the whole of the small gut, from the stomach to the ileocæcal valve, was found to be blue-black in colour. The mucous membrane throughout this part of the intestine was necrosed; the muscular coat was intact, but the blood vessels were markedly engorged. The pancreas was necrotic, and it was probably the excretion of necrotic material from it which had destroyed the intestinal mucous membrane. Large masses of such material were found in the duct of the pancreas, and must therefore have been secreted by the pancreas *ante-mortem*. There was no fat necrosis in the mesentery, probably because the necrotic material had found its way into the bowel.

The second case was that of a young woman who had died of intestinal obstruction, and in whom *post-mortem* similar appearances were present.

III.—CASES ILLUSTRATING CERTAIN URINARY CONDITIONS IN WOMEN ASSOCIATED WITH FREQUENT OR PAINFUL MICTURITION.

By Dr. David Newman.

This paper was published as an original article in the May number of the *Glasgow Medical Journal.*

IV.—MYOPIA: A REVIEW OF FIVE HUNDRED CASES, WITH SPECIAL REFERENCE TO ETIOLOGY.

By Dr. J. A. Wilson.

This paper was published as an original article in the April number of the *Glasgow Medical Journal.*

Meeting VIII.—31st January, 1913.

The President, Dr. A. Freeland Fergus, *in the Chair.*

I.—ABDOMINAL INCISIONS AND INTESTINAL ANASTOMOSIS IN THE TREATMENT OF CARCINOMA OF THE COLON.

By Mr. A. Ernest Maylard.

This paper was published as an original article in the June number of the *Glasgow Medical Journal.*

II.—INTESTINAL OBSTRUCTION, WITH NOTES OF CASES ILLUSTRATING VARIOUS CONDITIONS.

By Dr. J. Crawford Renton.

Dr. Renton read a short paper on obstruction of the bowels. He pointed out that since cases were promptly operated on the mortality was very much less. He referred to the various causes of obstruction, such as bands, intussusception, volvulus, Meckel's diverticulum, internal hernia, tumours, and paralysis. He recommended the sigmoidoscope as an aid in the diagnosis of tumours in the rectum and sigmoid. In very acute obstruction Paul's or Moynihan's tube was advised to drain the bowel previous to a radical operation. Since this had been adopted the mortality had greatly diminished. Where cæcostomy required to be done, the method recommended by Kader for the stomach had been found useful, as a valve was formed which prevented leakage of liquid fæces. He strongly recommended eserine salicylate and pituitary gland for paralysis of the bowel. In the last 33 cases which he had operated on there were three deaths, which was encouraging, and if the operations were carried out early in every case the mortality ought to be less.

III.—THE ADULTERATION OF FOOD STUFFS AND ITS INFLUENCE ON DIGESTION.

By Dr. William Watson.

Dr. Watson's paper was published as an original article in the June number of the *Glasgow Medical Journal*.

REVIEWS.

Minor Maladies and Their Treatment. By Leonard Williams, M.D., M.R.C.P. Third Edition. London: Baillière, Tindall & Cox. 1913.

Dr. Leonard Williams' object in gathering these lectures, delivered at the Medical Graduates' College and Polyclinic, into the present volume has been to supply in an accessible form detailed information on subjects with which the ordinary text-book necessarily deals in a cursory manner—colds, coughs, and sore throats; indigestion; constipation, diarrhœa, vomiting, and giddiness; rheumatism, neuralgia, headache; goutiness; change of air; general health; some drugs and their uses; and insanity.

This is a most interesting and instructive work, which from beginning to end is personal, supplying with conviction just that enlightenment we desire, and which we so frequently consult our books for in vain. The newly-qualified medical man, by making Dr. L. Williams' wide experience his own, will acquire what otherwise might take him a lifetime to accumulate; and he will learn that the comprehension and treatment of the commonplace can be not only most fascinating occupations, but even the means of preventing those malignant maladies, which alone seem capable of exciting youthful enthusiasm. To the older, and even elderly, practitioner this volume will come as a great joy, for it solves in a masterly fashion those very problems that confront him daily, confirms his convictions, supplies the stimulus needed to encourage perseverance in certain lines of treatment, points out much that he has overlooked, and makes plain to him many things that he has hitherto but imperfectly understood. This is a book that counts.

Glycosuria and Allied Conditions. By P. J. CAMMIDGE, M.D. London: Edward Arnold. 1913.

THE reputation of the author in the field of clinical chemistry stands very high, and deservedly so, and the present production amply sustains that reputation. No such exhaustive treatise on this important subject has ever before appeared, in the English language at all events, and clinicians in all departments of medicine and surgery will welcome Dr. Cammidge's work. At the same time one is tempted to conjecture when, if ever, the process of minute specialisation will fall within the limits of even the most conscientious member of the profession. Here we have nearly 500 pages (med. 8vo) devoted to only a small part of urinary analysis, and conceivably the same extended treatment might be rationally applied to all the other parts of such analysis. The time seems coming when such diverse ramifications must be supplied in "tabloid" form, otherwise the traveller may be lost in the thick jungle of obscurity.

Nothing, however, can alter the fact that in the present book the subject of glycosuria and similar conditions receives most careful and minute consideration, and as a reference book it has no equal.

For practical workers there is one defect. Many forms of apparatus are described in the text, but there is not a single illustration of any kind. At the present day this is a defect which cannot be excused even on the score of added expense, and at the published price of sixteen shillings a few diagrams and illustrations would have greatly enhanced the value of the book to the ordinary reader.

In the preface Dr. Cammidge points out that, with the exception of dextrose, the carbohydrates found in the urine in diabetes have received but little attention at the hands of clinicians, and that investigation of the other carbohydrates present—lactose, maltose, pentose, &c.—may throw light upon the pathology of the condition.

The first chapter is concerned with the classification and properties of the carbohydrates and their derivatives. In a general way these fall into three groups—(1) The simple sugars or monosaccharides; (2) the invertible sugars or disaccharides; and (3) the colloidal or non-crystallisable polysaccharides. In the monosaccharid group the most important form is that with the molecule containing six carbon atoms, the hexoses; and in actual practice the clinically important sugars in this group are dextrose, levulose, galactose, and mannose. The chemical and physical properties of these are given in detail. Similar remarks apply to the disaccharid group—sucrose, maltose, and lactose. The polysaccharides are relatively unimportant in the investigation of glycosuric conditions, but the methods by which these are converted into soluble and assimilable sugars in the body are of importance, and these methods are given in detail, stage by stage.

The presence of more than traces of sugar in the normal circulating blood is referred to, and the discrepancy in the results of estimation in this case by reduction methods and polarimetric methods is pointed out clearly. Similarly, pentose is found to be a normal constituent of the blood, while as to glycogen the author is of opinion that this substance, when found free in the blood plasma, is derived from the leucocytes, and is not normally free in the fluid part of the blood.

With regard to the presence of sugar in "normal" urine, it has been pointed out by Johnson that the definition of what is a normal urine is not easy; in spite of this, however, it seems probable that the urine of many perfectly healthy individuals contains traces of glucose and other reducing carbohydrates. This does not, however, assume the *constant* presence of these reducing sugars. In taking samples of urine for examination for sugar, it is pointed out that this sample should, preferably, be an evening sample, as in not a few cases the tests will only be positive with urine thus obtained. Of course, where sugar is present in quantity and quantitative estimation is required, the conditions are different. Further, care should be taken that the urine does not stand longer than is absolutely necessary, as minute traces of sugar may easily be destroyed by spontaneous fermentation.

Our present-day methods for the detection of sugar in urine are apparently very far in advance of those in China, for example, where it appears that the method is to allow the urine to evaporate on the ground in the sun and watch for the concourse of ants and other insects attracted by the sweet residue.

The various qualitative tests for sugar in urine are given in detail, and the precautions necessary to obviate fallacy are also pointed out. In dealing with Fehling's test a method is described (page 31) which, by avoiding a temperature higher than 60° to 70° C., eliminates reduction from constituents of the urine other than sugars. This is important; indeed, the whole performance of Fehling's test is so often done in a slovenly manner that the author is to be thanked for his endeavour to lay down a uniform method for its performance. The removal of albumen, excess of urates, and the reduction of a high specific gravity by the addition of distilled water, are essentially the points here which strike the clinical pathologist as important. Three distinct modifications of Fehling's test are described which have for their object the avoidance of error due to reducing substances other than sugars in the urine. In the same way several methods have been suggested to overcome the instability of the solutions, even when kept separate, of Fehling's solution. In Haine's modification glycerine is employed in place of Rochelle salt, but the author makes no mention of the fact that glycerine is itself a reducing agent under certain circumstances, so that its use should be deprecated. On the other hand, Benedict's modification seems free from any objections, and deserves extended trial in clinical laboratories; the author now relies upon it alone as a preliminary test in all cases. Crismer's safranin test appears to be almost too delicate for ordinary routine work, resembling in this respect Marsh's arsenic test. The phenylhydrazin test, giving osazone crystals in urines containing anything over a mere trace of sugar, is one of the best recent tests, but the time, skill, and microscopical manipulation required for its proper performance are so great that its practical value is greatly impaired.

Among "classifying tests" the author gives five methods, but in practice the fermentation test is at once the most readily applied and the most valuable in clinical work. The polariscopic results are of minor value owing to the presence of sugars and other substances having opposite rotatory powers on the ray of polarised light. Under "confirmatory" or "special" tests the author gives a number of methods which are of considerable value where doubt exists as to the exact nature of the sugar present.

Dealing with the quantitative methods of estimating sugar in urine, the author gives a fairly complete list; but although Gerrard's method is given, there is no indication of the modification by Rudish Celler, which overcomes the objections to the poisonous fumes evolved in the Gerrard process. Dealing with gravimetric methods of estimation, the difficulty of accurate weighing and the time spent in the process are objections which have not been given their proper weight; for clinical purposes the volumetric method is certainly the best. The only gravimetric method of any clinical value is the differential density method of Robert's, *i.e.*, the difference n the specific gravity of the urine before and after fermentaion, and essentially this is almost a volumetric method in ts actual working, inasmuch as there is no weighing at any stage. The quantitative methods for the estimation of the more rarely occurring sugars are also fully described.

The chapters on experimental, transitory, and persistent glycosuria are full and well put. Naturally, the last named demands great prominence, and, in fact, it receives almost 200 pages, or almost half the entire text. The subject of ransitory glycosuria is one, however, which is of much mportance, to those especially who have to deal with life nsurance matters, and this chapter will be found of very reat value in this respect.

The remaining chapters, dealing with the rarer forms of educing matters in urine—levulosuria, maltosuria, lactosuria, alactosuria, saccharosuria, pentosuria, glycuronic acid, lkaptonuria—are essential in a work of this kind, and much informative matter will be found in this section in ases where the sugar is not entirely dextrose. Diabetes nsipidus also receives a few pages of detailed notice.

The appendix contains a number of technical details and xplanations, which have been properly kept apart from the ubject-matter of the general pages.

There is a copious bibliography at the end of each hapter.

The author's "pancreatic reaction" in the urine in cases of "pancreatic diabetes" naturally gets considerable prominence and a full description, and a recently devised quantitative pancreatic reaction is given on p. 275. The true value of this test is still to some extent speculative, but the constant accumulation of evidence will in time enable it to take its proper place in the chemical methods of investigation.

No up-to-date clinician can afford to be without Dr. Cammidge's book.

Clinical Bacteriology and Hæmatology for Practitioners. By W. D'Este Emery, M.D., D.Sc. Fourth Edition. London: H. K. Lewis. 1912.

The valuable work of Dr. W. D'Este Emery is now so well known that but few words of commendation are necessary in introducing its fourth edition. The author tells us in his preface that the alterations which have been called for are alterations chiefly of detail: but he has added a section on the Wassermann reaction which should aid the practitioner in his interpretation of its results. Investigation of the volume reveals that it forms, as heretofore, a guide to the methods of clinical bacteriology and of the examination of the blood which is complete, authoritative, and, above all, practical. It supplies precisely the information which enables the practitioner to perform for himself many investigations in which he would otherwise need expert assistance, and it gives him the means of forming an accurate judgment of the value of his results. It is to be warmly recommended to all scientific practitioners.

Saint Thomas's Hospital Reports. New Series. Edited by Dr. J. J. Perkins and Mr. A. C. Ballance. Vol. XXXIX. London: J. & A. Churchill. 1912.

The thirty-ninth volume of these *Reports* contains, in statistical and tabular form, full information with regard to all the cases treated during the year 1910, both in the general wards of the hospital and in the special departments: an analysis of the surgical and gynæcological operations; a report by Mr. C. M. Page on the results of suprapubic cystotomy from 1906 to 1910, from which it appears that the average mortality-rate was 14·2 per cent; a list of additions to the pathological museum; and a report by Dr. Athole Ross upon the cases treated by bacterial vaccines. These, it would seem, have been used almost exclusively in surgical cases; and the chief feature of interest in the report is Dr. Ross's warm eulogy of the use of vaccines in cases of acute bone disease (periostitis and osteomyelitis) due to infection by the staphylococcus aureus. The volume contains much information that will be of value to the hospital statistician.

Massage and the Original Swedish Movements: their Application to various Diseases of the Body. By KURRE W. OSTROM. Seventh Edition. London: H. K. Lewis. 1912.

MR. OSTROM'S work, the popularity of which is sufficiently attested by the number of editions through which it has passed, is the outcome of a series of lectures delivered to various nursing institutions. It is therefore in the first place practical, and it gives a very complete and adequately illustrated account of the various operations of massage and of the different forms of Swedish movements, which is followed by a discussion of their applicability to the diseases of different regions of the body, with indications for the selection of the movements appropriate to each case. Physiological and anatomical considerations are but little dwelt on, but their treatment is probably sufficient in view of the aims of the book. Although not a complete text-book of massage, it will be found useful by anyone desirous of acquiring a working familiarity with its manipulative methods.

Occasional Papers on the Prevention of some Common Diseases in Childhood. By J. SIM WALLACE, D.Sc., M.D., L.D.S. London: Baillière, Tindall & Cox. 1912.

THE nine short papers comprising this small volume have already appeared in various medical and dental journals, but their presentation in this form will, it is hoped, lead to a wider recognition of the importance of the views therein expressed. The prevention of oral sepsis is the main theme. Not heredity but unsuitable diet is the cause of dental caries.

Having attained the age of 9 months the child should have solid food of a kind that it can gnaw, in addition to its milk diet, and at 2½ years it should have the same kind of food as adults—three meals a day and nothing between. The meals should not end with fermentable carbohydrates such as jam, milk puddings, or food with much sugar, or, if these are given, they should be followed by fresh fruit.

One of the papers is on the diet of school children, another on the need of reform in feeding at schools. Attention is directed to the fact that there is no instruction of the medical student in elementary odontology. Cold, damp night air is said to be an exciting cause of adenoids, and open windows under such conditions are a mistake.

There is a certain degree of immunity acquired to ubiquitous diseases, the author suggests, by means of the bacterial flora of the mouth—an important reason for promoting oral hygiene. The importance of oral and alimentary hygiene in the prevention of tuberculosis is the subject of a paper. In the concluding paper—on infant mortality and milk—it is pointed out that milk diet during lactation is not conducive to either oral or alimentary hygiene, and milk-fed mothers seem less able to suckle their infants than those on ordinary diet.

There is a good deal of repetition, and of the truth of some at least of the author's views there has long been recognition.

Surgical Operations: A Handbook for Students and Practitioners. By Professor Friedrich Pels-Leusden, of Berlin. Only authorised English Translation, by Paxton E. Gardner, M.D., New York. With 668 Illustrations. London: Rebman, Limited. 1912.

The aim of this work is to "link together" what the author has for long years brought to the attention of students in practical courses or theoretical lectures. While therefore it is particularly intended for students and general practitioners, the author hopes that the specialist may find in its pages many useful things. He frankly admits in the preface that he has not been able to rely on his own experience in the living subject for all the branches of surgery; but he has tested most methods on the cadaver and on animals, and he urges the beginner to seize all opportunities which he may have of operating on the cadaver or on dogs.

There is a good introductory chapter on antisepsis and asepsis, and this is followed by one on anæsthesia. Division and re-union of tissues is considered in a chapter in which are given details of incisions and suturing, the various methods of grafting, nerve suture, osteotomy, &c.

The surgery of the blood-vessels comprises hæmostasis, temporary and permanent; treatment of wounds of blood-vessels, also the ligation of individual large arteries. Amputations and resections occupy considerable space, and are followed by descriptions of various operations on the extremities. Of these we may mention tapping of joints, exposure of bones and of nerves, tenotomy, and operations for talipes. The various regions of the body, head and neck, thorax, abdomen, genito-urinary organs, are then dealt with.

We have looked into various sections of the work, and perusal and inspection have shown us that it is carefully written. The author seems to have struck the happy medium between diffuseness and a too great conciseness, and the description of the different steps of the various operations is admirably aided by the illustrations with which the volume is well supplied. We would note further that the author has not confined himself to the actual technique of operations, but he gives valuable hints as to treatment.

There are in the market many works on operative surgery, and it is difficult to prophesy a success for any individual book. We feel, however, that the work before us is a sound one, and no one reading it and working by it is likely to go far wrong in his treatment of such surgical lesions as require operation.

X-Ray Diagnosis and Treatment: A Text-book for General Practitioners and Students. By W. J. S. Bythell, B.A. Cantab., M.D. Vict.; and A. E. Barclay, M.B. Cantab., M.R.C.S., L.R.C.P. London: Henry Frowde and Hodder & Stoughton. 1912.

The book consists of about 140 pages. In the preface the writers say that the book is not written for the x-ray specialist, their intention being rather to place in the hands of the general practitioner a guide which will enable him to know in what cases the x-rays may be of service in diagnosis or treatment. They refer to the practice still existing of having x-ray apparatus "neither worked by nor under the personal control of a medical man," only to protest against it as productive of much harm: but they remind us that the rays are just as potent for evil in the hands of a medical man as in those of an electrician or porter, and that in this perhaps more than in any other branch of medicine "a little learning is a dangerous thing."

Emphasis is laid on the necessity of using the rays not instead of, but in conjunction with the old-established methods of observation.

After an opening chapter on the *x*-rays and their use in medicine, about one-third of the book is occupied by the subjects—(1) Injuries of, (2) Diagnosis of, and (3) Examination in Children of, the Bones and Joints.

On p. 26, speaking of the difficulty of the differential diagnosis between malignant and benign bone cysts, we are surprised to find the statement—"The proper course is to take radiograms at intervals of a few weeks in order to watch the behaviour of the growth, . . . and a certain amount of information may sometimes be obtained in this way, but a diagnosis cannot be made with any degree of confidence in the absence of an exploratory incision." Surely when malignancy is suspected the proper course is to get to the exploratory incision at once, and not after weeks of delay.

The book is a simple, well-written exposition of the subject, and is copiously illustrated. The skiagrams are placed in groups at the ends of the chapters, and great pains have evidently been expended on their production. There is a full index.

Hare-Lip and Cleft Palate, with Special Reference to the Operative Treatment and its Results. By JAMES BERRY, B.S.Lond., F.R.C.S., and T. PERCY LEGG, M.S.Lond., F.R.C.S. London: J. & A. Churchill. 1912.

THIS book has been written with the purpose of describing in full detail the methods that the authors have found most useful in the treatment of hare-lip and cleft palate. The contents, which extend to some three hundred and odd pages, fall into various divisions. Two chapters are devoted to the development, anatomy, and physiology of the lips and palate. The varieties of hare-lip and cleft palate are grouped in a third chapter, followed by one in which the functional results of cleft palate are considered.

The details of treatment occupy about two-thirds of the volume, and in an appendix of cases the authors furnish the results of their operations for cleft palate.

The development of the region is, on the whole, clearly set forth. In the section (p. 12, *et seq.*) dealing with the situation of the cleft in the alveolar process, however, there is a sense of scrappiness, and it is difficult in places to be sure whether the authors are expressing their own opinions or quoting in a condensed form the views of others. There is also in this section a good deal about clefts of the palate proper. The description of the muscles of the soft palate is good, but it might have been improved by the addition of a diagram.

In the introduction to the chapter on the varieties of hare-lip and cleft palate reference is made to the deformity sometimes described as "double lip," and examples are figured, but no mention is made of its nature. There is a very complete description of the varieties of hare-lip and cleft palate, followed by a chapter dealing with speech-production.

The authors give a good description of their methods of treatment of the various forms of hare-lip and cleft palate. They advise operating on hare-lip within the first few weeks of life. In the appendix of cases of cleft palate we observe that nearly 50 per cent of Mr. Berry's cases were operated upon under the age of 4 years. The operation which the authors recommend is that which is done, we believe, by the majority of surgeons, viz., freeing the muco-periosteum of the hard palate, separating the soft palate from the edge of the palate bones, rawing the edges of the cleft, and suturing. The authors' results confirm us in our belief as to the efficiency of this method.

This work should be in the hands of every operating surgeon. It is easily read and copiously illustrated, and is altogether a good presentment of the subject.

The Tea-habit in relation to Cancer. By DOUGLAS MACMILLAN.

THIS forms No. II of the "Cancer Crusade Series," and is a penny pamphlet attempting unsuccessfully to connect cancer with tea-drinking. There is a recommendation of a certain tea which is "the result of many years of careful research on the part of its inventor," also of another preparation, which, when mixed with tea, gives "a reduction of 20 to 30 per cent of the injurious tannin." In the concluding paragraph there is a statement attributed to a Dr. J. Batty Duke—whose name does not appear in a recent issue of the *Medical Directory*— that "it is open to question whether the whisky bottle or the teapot exercises the more baneful influence." The pamphlet may interest some faddists.

The First Annual Report and Year Book of the Society for the Prevention and Relief of Cancer.

THE Report is for the year ending 31st December, 1912. The frontispiece is a reproduction from a photograph of the President of the Council, Robert Bell, M.D., F.R.F.P.S. The report of the secretary, Douglas Macmillan, is interesting reading to those who care to investigate statistical fallacies. The origin, constitution, and rules of the Society are given in full, and this is helpful, as otherwise certain persons might be misled by the name of the Society. At the end are a number of forms for subscriptions and donations. There is a short article in the pamphlet, by Charles W. Forward, entitled "The need for scientific method in cancer research," and with the title of this article all will agree.

The Journal of Hygiene. Plague Supplement II.

THIS, which forms volume xii, is a continuation from volume xi, also dealing with plague investigations in India, a review of which appeared in our columns recently.

In the present number the first article deals with plague in Madras city. Singularly, although Madras is the third largest city in India, and contains over half a million population, cases of plague have been always relatively infrequent with the exception of an epidemic in 1905-1906. Examinations of rats and rat fleas of Madras city were carried out extensively, and the low rate of plague incidence is clearly not due to want of facilities for carriage by the rodents and parasites. Further, the passport system and its associated energetic sanitary administration appear to be partly responsible, at all events, for the comparative freedom from any real epidemic of plague in Madras in recent years.

The question of the acquired immunity of rats to plague received very exhaustive investigation at Poona, near Bombay, and the series of tables forms an interesting commentary on the thoroughness with which the investigation was carried out. In a general way it may be stated that the immunity was found to be greatest in places which had suffered most severely from plague, and least in those places where true epidemic plague had not occurred. Further, this immunity is not always acquired from an actual attack of plague, but is transmitted by the parent rats to their offspring which have not been exposed to infection.

An article follows on what is termed chronic or "resolving" plague. Here the results go to show that the lesions in this form are localised and confined for the most part to the spleen, and that in many cases it is not possible to isolate the bacillus from these lesions, although the bacillus can be found in a sufficient number of cases to prove the actual origin in many. There is one reservation here, and that is that very similar lesions can apparently be produced by other causes.

Two short articles on the experimental production of resolving plague and *post*-plague lesion follow.

The article on the serum treatment of human plague is very interesting, but definite conclusions are hardly possible so far.

Other interesting articles are on the attempt to separate the antigen from the nucleoprotein of the plague bacillus by filtration through gelatin; Besredka's method of vaccination; observations of the mechanism of plague immunity, by Sydney Rowland; the opsonic index in plague vaccination, by Ralph St. John Brooks: and the preparation of antitoxic plague sera, by A. T. M'Conkey.

The Labyrinth: An Aid to the Study of Inflammation of the Internal Ear. By ALFRED BRAUN, M.D., and ISIDORE FRIESNER, M.D. London: Rebman, Limited.

IN this work an attempt has been made to deal with the internal ear from the point of view of the anatomist, the physiologist, the pathologist, and the surgeon. In many respects the attempt has been successful, but it must be admitted that there are some rather grave defects.

So long as the writers are concerned with the generally known anatomical facts, the descriptions are clear and concise, but many important facts concerning the minute anatomy of the structures are either not referred to at all or their significance is underestimated. Thus the increasing size and strength of the ligamentum spirale from apex to base of the cochlea is not pointed out, although it has a bearing upon all theories of hearing quite as important as the alterations in width of the basilar membrane.

In the physiological portion the discussion on the theories of hearing is very inadequate, as illustrated by the fact that the "theory of maximum amplitudes" is not even mentioned.

On p. 82 it is stated that "Helmholtz considered that each one of the fibres can vibrate independently of all the rest. Each fibre vibrates in harmony with a certain tone." On p. 83 it is stated—"In reality Helmholtz did not consider that each fibre vibrated with each tone, but that a group of fibres was set in vibration, the central fibre vibrating strongest, and the vibration gradually diminishing in the fibres on either side. The vibration of the central fibre is so much stronger than the others that the tone to which it corresponds predominates." In regard to these two statements it may be said that they are perfectly correct. The curious fact is that neither Helmholtz himself nor the writers of the present work see the incompatibility of the two statements in so far as they refer to Helmholtz's theory. If more than one fibre vibrates to each tone, and if each fibre when vibrating excites the sensation of a particular tone, then, when a single pure tone is sounded and conveyed to the cochlea, we should hear that tone strongly and a number of corresponding tones above and below it more freely. This is certainly not the case, and this fact alone is sufficient to render the Helmholtz theory of hearing untenable, apart from the consideration that other facts show its insufficiency.

The recognition of the relationship of the internal ear to sea-sickness is ascribed by the writers to Barany. This relationship was recognised by others before Barany.

It is unfortunate that the writers do not appear to have appreciated one of the important laws underlying all sensation, viz., that to evoke any given sensation the stimulus applied must be such that its intensity is constantly varying in degree.

The portion on methods of examination is a very good and exhaustive synopsis of this difficult subject. The only fault to be found is that the writers do not emphasise the fact sufficiently that the ocular and other reflexes associated with the labyrinth vary enormously in perfectly normal individuals. It is this fact that takes away so much value from the nystagmus tests for practical purposes.

The pathological changes in labyrinthitis are described well. The subject is a difficult one for the obvious reason that in cases which recover no material can be had for study, and *post-mortem* examination of cases which have been observed during life is rarely obtainable.

The chapter on symptomatology, also, is very good, and deserves careful study, and the same may be said of the chapter on the treatment of labyrinthitis.

The unsatisfactory character of the anatomical and physiological portions of the book are redeemed by the chapters on symptomatology and treatment. The illustrations are fairly good.

Marriage and Motherhood: a Wife's Handbook. By HUGH S. DAVIDSON, M.B., F.R.C.S.Ed. The People's Books. London and Edinburgh: T. C. & E. C. Jack.

IT is no part of the purpose of this little book to overemphasise the discomforts and dangers of pregnancy. The advice here given is sound, and could not very well be improved upon. We must, however, emphatically protest against the instruction on page 84, under the heading of "Deformities and diseases of the newly-born child"—"The nurse should pass either a thermometer or her little finger, well anointed with vaseline, into the bowel to make certain" that there is no obstruction.

Our Baby. By Mrs. LANGTON HEWER. Fourteenth Edition. Bristol: John Wright & Sons, Ltd. 1913.

THIS useful little book has enjoyed a well deserved popularity during the past twenty years, and can still be recommended as a reliable guide to mothers and nurses. The present edition is not a mere reprint, but has been carefully revised, the chapter on "Infant feeding" being well up to date, while useful information has been added on moral training, tuberculosis, and on the care of children born in the Tropics.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

MEDICINE.

The Use of the Oxydase Reaction in the Differentiation of Acute Leukæmias. By J. S. Dunn (*Quarterly Journal of Medicine*, vol. 6, No. 23, p. 293).—The author points out that until a few years ago all cases of acute leukæmia were classified as lymphatic. Embryological research, however, showed that many of the non-granular cells previously classified as lymphocytes were, in fact, non-granular precursors of myelocytes—named by Naegeli myeloblasts. Recently Schultze has confirmed this view by means of the oxydase reaction. This reaction consists in staining the blood or other tissue in a solution of equal parts of one-fifth per cent aqueous solution of dimethylparaphenylenediamine and a saturated solution of alpha-naphthol; myeloid granules are stained blue.

Three cases of leukæmia were examined in this way.

CASE 1.—Male, aged 59 years. Serious symptoms lasted only for a few months, but possibly leukæmic changes were present in the blood and organs for some time previously. The rise in the circulating leucocytes from normal to over 200,000 occurred in ten days. The leucocytes were very embryonic in character. Examination of the blood by ordinary methods suggested that these embryonic cells were myeloblasts. An unbroken chain of transitional forms between non-granular myeloblasts and granular myelocytes could be determined.

The oxydase reaction was positive in the great majority of these cells, and was positive in greatly varying degree in different examples, a fact which confirms the idea that transitional forms of varying degrees of maturity were represented.

The myeloid nature of the deposits in the various organs was fully confirmed by the positive oxydase reaction. The type of blood formation was myeloid.

CASE 2.—This case was a typical example of acute leukæmia, the most prominent features being its brief course, hæmorrhages under the skin and from the mucous membranes, fever, and ulcerative gingyvitis. The leucocytes numbered about 80,000 per c.mm., the great majority of which were large non-granular cells presenting the typical characters of Naegeli's myeloblasts. Transitional forms between these and myelocytes were scanty. The oxydase reaction conclusively proved that some of these myeloblasts were of a myeloid nature. The reaction was negative in the majority of these cells, probably on account of their highly embryonic character. The type of the blood-formation in the marrow, in the pulp of the spleen, and in the medulla of lymph glands, and the atrophy of the lymph nodes confirm the view that the case was one of acute myeloid leukæmia.

This case differs from Case 1 in being more acute and more embryonic in type, and showing much less advanced changes in the organs. Probably the myeloid foci in the organs were of metastatic rather than of metaplastic origin.

Case 3.—In this case there was a leucocytosis of 250,000 per c.mm. Only 3 per cent of these were granular when stained with Jenner and triacid stains. And the oxydase reaction was positive in only 3 per cent of the white cells, but the vast majority of the non-granular cells presented definite myeloid characters. Very few transitional forms between myelocytes and myeloblasts were found. Unfortunately a *post-mortem* examination could not be made, and in the absence of histological examination of the blood-forming organs absolute proof of the myeloid nature of the condition is wanting. The author considers, however, that in the light of Case 2, where there was an almost equally large proportion of non-granular cells, and which was undoubtedly one of myeloid leukæmia, this case must be classified in the same category. He points out that in this case the diagnostic value of the oxydase reaction breaks down.

The conclusions drawn from these cases are as follows:—

1. A positive indophenol-oxydase reaction in large non-granular cells in acute leukæmia is certain proof of the myeloid nature of the disease.

2. The oxydase reaction is negative in the more embryonic forms of marrow-cells. It is always negative in small myeloblasts, and is probably always negative in the most typical stage of large myeloblasts, with uniformly dense basophil reticular protoplasm.

3. Cases of acute myeloid leukæmia may occur in which the type of blood-formation is so embryonic that the oxydase reaction is valueless for differential diagnosis, but even in such cases the histological characters of the large leucocytes may render a diagnosis possible.—G. B. Fleming.

An Observation Relating to the Nature of Auricular Fibrillation. (Lewis, *Heart*, vol. iv, No. 3, p. 272.)—The author considers that auricular fibrillation results from the formation of new impulses at a number of abnormal and ectopic foci in the auricular muscle. Only some of these impulses get through the bundle of His; consequently the ventricle does not fibrillate.

This hypothesis suggested the following experiment:—The right auricular appendix was crushed at its junction with the auricle, only a small band of muscle joining the appendix to the auricle being left intact. The appendix was then faradised and thus made to fibrillate. The result on the auricle was to produce co-ordinate but grossly irregular contractions, like the contractions of the ventricle in auricular fibrillation.—G. B. Fleming.

The Quantitative Estimation of Amylolytic Ferments in the Urine as a Measure of Certain Pathological Conditions. Dudley Corbett (*Quart. Jour. of Med.*, vol. vi, No. 23, p. 352).—A review of the previous work on this subject is given. The method used to estimate the quantity of amylolytic ferment in the urine was as follows:—Ten test tubes containing quantities of urine varying from 0·6 to 0·06 c.c. were incubated for half an hour with a 0·1 per cent solution of soluble starch, the amount of fluid in each tube being previously made up to 1 c.c. After incubation at 38 to 39 degrees for half an hour, a drop of one-fiftieth normal iodine solution was added to each tube. The tube that first shows a blue colour is designated the "limit," and the amylolytic strength of the urine estimated. For example —In a particular case the tube containing 0·1 c.c. urine was the one which showed a blue tinge on the addition of iodine, those containing more urine having altered all the starch. The next tube to the "limit" tube contained 0·2 c.c. urine; this, therefore, was the tube which was just able to convert all the starch into dextrin. The calculation is as follows:—0·2 c.c. urine digest 2 c.c. starch in half an hour, therefore 1 c.c. urine digest 10 c.c. starch in half an hour—that is, d equals 10 units.

The author tried this reaction with the urines of a large number of patients suffering from various diseases. Briefly his results are as follows:—

In normal individuals the amount of ferment passed in the day is fairly constant, the average being between 10 and 20 units.

The ferment is also present in normal blood serum, averaging about 10 units.

In an infant fed on milk the amount of the ferment was very small, but when starch was given this rose at once. The method may be used as a direct measure of renal efficiency. The quantity of ferment as compared to that in the blood, in the cases in which there is albuminuria, is small if there is renal inefficiency, while, if the urine is free from albumin, the quantity of ferment as compared to the normal is diminished in cases of renal inefficiency.

High values, up to 100 units, were found in certain infectious diseases without marked renal damage. Only in pancreatic disease, some cases of eclampsia, and in one case of acidosis in a child were readings above this found. In all undoubted cases of pancreatic disease high readings were found.

In diabetics on strict treatment subnormal readings were usually found. In severe cases the readings were lower than in the milder forms, although in view of the excessive dilution of the urine the total amount of ferment excreted was within the normal limits.—G. B. FLEMING.

SURGERY.

The "New Heel" with a Pathognomonic Sign for Detecting Inflammatory Lesions in the Anterior Arch of the Foot. By Max Strensky, M.D. (*Journal of the Amer. Med. Assoc.*, 12th April, 1913).—The modern high-heeled shoes compel the anterior arches of the feet to assume the function of weight-carriers. Thus they become increased in size and strength and change their flexibility and elasticity, which is essential to a normal gait, to rigidity, which is essential to a weight-carrying structure. In short, they acquire all the characteristics of heels.

The resulting pain is due to a number of causes—the stretching of ligaments, spasm of muscles, inflammation of joints, the grinding together of small bones as they form new facets, and the accompanying periostitis. The reflex pains are due to the inflammation involving the peripheral nerve-endings, and to pinching of nerves by the grinding bones.

A pathognomonic sign of anterior arch trouble is pain on sudden flexion of the toes. The explanation is that the metatarso-phalangeal joints are inflamed and the toes kept in extension in order to accommodate the inflammatory products in the joints. Sudden flexion increases the intra-articular pressure.

Treatment consists in rest, heat, &c., and gradual lowering of the heels of the shoes.—ROY F. YOUNG.

A Contribution to the Study of Metatarsalgia. By M. Raymond Gregoire (*Archiv. Gen. de Chirurgie*, May, 1913).—In metatarsalgia the pain commonly affects the head of the fourth metatarsal, though the other metatarsals may suffer also.

Two hypotheses have been advanced to account for this pain, namely, periostitis and pressure on the nerves by the heads of the metatarsals. Anatomically, however, the nerves lie on the plantar aspect of the metatarsals and not between their heads.

The author cites a case of his own in which he operated and found a neuroma of the fourth digital plantar nerve at the point where it bifurcates. Resection of the neuroma resulted in a complete cure.—ROY F. YOUNG.

Review of 534 Operations on the Mammary Gland. By John B. Deaver, M.D., Sc.D., LL.D. (*Journal of Amer. Med. Assoc.*, 15th

March, 1913).—These cases consisted of—carcinoma, 370; fibro-epithelial, 123; chronic mastitis, 24; sarcoma, 11; tuberculosis, 6.

In 13 per cent a definite history of injury was given. Fifty-nine of the cases had a family history of carcinoma. The average age in the cancer cases was 49·6; 34·5 in the fibro-epithelial. The initial symptom was a lump in 78 per cent of the cancer cases, and in 86 per cent of the fibro-epithelial. Pain was found to be a rare symptom in early malignancy. The author considers that the opportune time for surgery in mammary cancer is the presence of a symptomless, movable tumour. He draws attention to the frequent gain in weight of women with cancer of the breast, incidental to metabolic changes with the menopause.

Both malignant and benign types of tumour were most frequently found in the upper and outer portions of the breast.

With regard to metastasis, he finds that palpably enlarged axillary and supraclavicular glands do not necessarily mean carcinomatous involvement. In both chronic mastitis and carcinoma these nodes tend to undergo a hypertrophy, which has been styled the pre-cancerous adenopathy. In a number of the cases the neoplasm involved the upper and inner quadrant; the entire freedom of lower cervical involvement suggests that the lymph channel, described by Poirier and Cuneo, is not effective in draining this area. The freedom of attachment of the tumour to the pectoral fascia does not indicate non-involvement. The same is true of the digitations of the serratus magnus arising from the fifth and sixth ribs in involvement of the lower outer quadrant. Vascular embolic infection probably explains distant metastases. Liver involvement and deposits in the humerus and thoracic cavity are the result of lymphatic involvement.

There were three primary operative deaths in this series. The average length of time the disease had existed was thirty months. In the cases in which the patients were well three or more years after operation, sixteen months had elapsed before operation. Of these patients only 12 per cent had retraction of the nipple, and 18 per cent attachment of tumour to skin. In none of them was the tumour attached to the pectoral fascia.

The end results of 119 cases which have been definitely traced is as follows:—Of 44 cases of fibro-epithelial tumour, 41 have remained well for an average period of six years; 2 patients have had operations for similar tumours in the opposite breast; 1 case, diagnosed clinically and microscopically as fibro-adenoma, had early malignant degeneration of the breast and died of recurrence after radical operation. Sixteen, or 21·3 per cent, of 75 cases of carcinoma have passed the three years' limit and are free from recurrence on an average of seven years. Thirty-seven died of recurrence, and 4 of causes other than cancer. Six others have recurred at the present time. The remainder are apparently well, but sufficient time has not elapsed to make this certain.—Roy F. Young.

Pyelotomy for the Removal of Renal Calculi. By D. N. Eisendrath, M.D. (*Journal of the Amer. Med. Assoc.*, 12th April, 1913).—Pyelotomy has rarely been employed until recent years. French surgeons have been the most enthusiastic advocates of this method, but now it seems to be coming into universal use.

Nephrotomy is preferable in cases in which there is a large branched calculus filling the pelvis, or in which there are many small calculi scattered throughout the kidney; in infected cases in which there is more or less destruction of the parenchyma; when the renal pedicle is short, or delivery of the kidney into the wound difficult. Also the condition of the parenchyma can be determined better through a nephrotomy opening.

The disadvantages of nephrotomy are the bleeding during the operation, the danger of hæmorrhage following operation, the danger of overlooking calculi, and the danger of necrosis of the parenchyma.—Roy F. Young.

DISEASES OF CHILDREN.

The Use of Dried Milk in Healthy and Diseased Infants. By Dr. Bonnamour (*Archiv. de Medecine des Enfants*, May-June, 1913).—In a very extensive article, illustrated by numerous weight charts, the author details his experience at Lyon with powdered milk. Whole milk, or milk from which half the cream has been removed, is reduced to the state of a powder by heating to a temperature of 100° C. He states that as a result of this procedure the milk is not altered in its composition, and that it is made more digestible. He does not, of course, consider dried milk superior to all other varieties of nourishment for the infant, and if the child is doing well on breast milk or sterilised cow's milk he does not interfere; but if the child is not thriving, or is vomiting, and especially if there is a commencing marasmus, he at once institutes the use of dried milk, which for these conditions he holds is superior to all other diets.

One litre of milk produces 125 grms. of powder. The powder is mixed with a certain amount of sterilised water, and each feed is prepared immediately before use. Before 6 months of age the powder made from the skimmed milk is used, while for children over 6 months the powder obtained from the whole milk is given. For a child under 2 weeks ʒii of powder to ℥vi of water, at 2 months ʒss of powder to ʒiss of water, at 6 months ℥vi of powder to ʒii of water, and at 8 months ℥i of powder to ʒiiss of water are the proportions recommended. He advises seven feeds daily.

The cases are divided into four groups. Group I includes ten cases where the breast milk was not sufficient, and in which the administration of several daily feeds of dried milk enabled the child to steadily increase in weight. In Group II are six babies which were successfully reared on dried milk from birth or very soon after birth. In Group III are seventeen cases. These were all healthy children, weaned between the second and third month for various reasons, and thereafter exclusively and very successfully fed on dried milk. In these cases any diarrhœa which had previously existed disappeared with the change of diet. In the last group are twenty-six cases of gastro-enteritis and marasmus, and, with the exception of five, all did well.

During seven years the author has only met with five infants who did not tolerate this food. One was a case of pylorospasm, in another the mother would not adhere to the instructions, one child died of meningitis, another of broncho-pneumonia, while in the fifth the cause of death was unknown.

As the author makes no mention of scurvy, he apparently has not met with any cases resulting from this variety of feeding, although he does not seem to have taken any precautions for its avoidance.—LEONARD FINDLAY.

The Pathogenesis of Casein Curds in the Stools of Infants. By A. F. Hess, M.D., New York (*Amer. Jour. of Diseases of Children*, vol. v, No. 6).—In a very extensive clinical research on this subject, the author concludes that there are children who pass in the motions large dense bean-like curds composed of casein. Such a modification of digestion does not necessarily impair the child's nutrition, as, in spite of the regular passage of curds in the motions, the weight steadily increases. These curds would seem to be formed in the stomach, since by the introduction of the milk into the duodenum by means of a duodenal catheter no curds are formed. The addition of rennin to the milk increases the tendency to the production of the curds, and it would appear that in certain children there is some modification of the gastric juice—an excess of rennin—which induces the formation of an unduly tenacious curd. Such masses of casein are found to resist digestion, *in vitro*, and there is no evidence that the children who pass them are deficient in pancreatic activity. The curds recovered from the motions, thoroughly washed and stained with fuchsin for easy identification, have been fed to normal children and recovered from the stools, thus showing their great power of resisting digestion. Although, as previously mentioned, their presence does not necessarily affect the health of the infant, there can be no doubt that they evidence deficient casein digestion, and, as such, should not be allowed to persist. For their removal, treatment of the milk by pasteurisation at a temperature of 170°-175°, or by boiling, is, in the author's experience, quite efficient.—LEONARD FINDLAY.

Papulo-Necrotic Tuberculides in Infants. By Benno M. Monker, A.B., M.D. (*Amer. Jour. of Diseases of Children*, vol. v, No. 6).—The author draws attention in the diagnosis and prognosis of tuberculosis in childhood to the importance of these "small, round, slightly raised, rather hard, flat papules varying in size from a pin head to a millet seed, of red to reddish-brown to livid brown colour, often presenting on their surface a small dry crust, which is easily removed, leaving a whitish central depression with occasionally a small bleeding point in its centre," and when put on the stretch having a "glistening appearance." They are more frequent in infants than older children, being present in 40 per cent of tuberculous infants under 1 year. They occur on any part of the body, but the seats of election are the "thighs, especially napkin region, extensor surfaces of legs, fore-arms, dorsum of fingers and toes, and lower half of back." In not a few living tubercle bacilli have been demonstrated by animal inoculation, and histologically they present the usual picture of tuberculosis with lymphocytes, epitheloid cells, giant cells, and necrosis. Their presence is usually indicative of miliary tuberculosis, and they may be the first definite signs of the disease, and though, as a rule, signifying a grave condition the issue is not invariably fatal.
—LEONARD FINDLAY.

Infantile Beri-Beri. By V. L. Andrews (*Philipp. Jour. of Science*, 1912, vol. vii; *Schmidt's Jahrbuch*, May, 1913).—In Manilla the mortality of children under 1 year of age is one-half of the total mortality. Seventy-five per cent of the children that die are breast-fed, and the great majority of them suffer from beri-beri. Any infection or toxæmia can be excluded, and the mother's milk alone can be made answerable for the condition. The staple food of the mothers is white rice. If the diet is altered, or if an extract of the scales of rice is given to the mother, the child's condition, provided it has not progressed too far, is relieved. Seven puppies varying in age between 2 and 14 days that were fed for one month or longer on the milk from a woman whose child had died of beri-beri all developed the disease.
—LEONARD FINDLAY.

DISEASES OF THE EAR.

The Inadequacy of the Drainage sometimes obtained by the Ordinary Myringotomy in Acute Otitis Media, and a Method of Overcoming the Difficulty. By Dr. Robert Lewis (*The Laryngoscope*, February, 1913).—The author publishes this case as it serves to illustrate a procedure which he has adopted in dealing with cases of middle-ear disease attended with suppuration, in which œdematous swelling of the tympanic membrane was so great as to obstruct drainage of the middle ear.

The patient was 68 years old. He was the subject of diabetes mellitus, and he had been suffering from an acute purulent otitis media for some weeks. Paracentesis of the membrane had been performed on three occasions before the patient was seen by the author. On examination of the affected ear the external auditory canal was swollen, the drum membrane bulging and œdematous, and in the mid-posterior portion of the membrane was a teat-like perforation, through which pus escaped with difficulty. There was œdema and tenderness on pressure over the mastoid process, and a mastoid operation seemed to be the only procedure which could be recommended. This was declined, and the tympanic membrane was again freely incised.

On the following day the œdematous state of the drum membrane so seriously interfered with drainage that Dr. Lewis deemed it necessary to excise a portion of the membrane to ensure free drainage. He did so by removing the lower and middle posterior portion of the drum membrane with Hoffman's punch forceps. The discharge, which was profuse, escaped freely, and the necessary remedies were readily applied.

This case was treated four years ago, and in the interval the author says that he has dealt with over twenty similar cases in a similar manner, in eighteen of which recovery took place without the necessity of opening the mastoid cells.—WALKER DOWNIE.

Primary Acute Mastoiditis. By A. M. de Santals (*Archives Internationales de Laryngologie, d'Otologie, et de Rhinology*, January-February, 1913).—The author describes a case of this interesting condition. Primary acute mastoiditis may follow a blow on the mastoid, or it may arise from infection by way of, but without manifest involvement of, the tympanum, and without perforation of the membrane and otorrhœa. The case described is of the latter variety. It is necessary to bear the possibility of such a condition in mind. The local signs of mastoid suppuration are present, and the treatment is that for ordinary acute mastoiditis. The diagnosis may present a good deal of difficulty. X-ray photography of the mastoid region would be helpful, and as these photographs are sometimes difficult to read it is well to fill the auditory meatus with bismuth paste, as described by Mr. Alexander Sharp before the Leeds and West Riding Medico-Chirurgical Society, and reported in the *Lancet* for 25th January, 1913, always bearing in mind that, as Cheatle has shown, in a certain number of cases there is, normally, dissimilarity between the two mastoid regions.—W. S. SYME.

Salpingo-Pharyngeal Adhesions: A Clinical and Therapeutic Study. By M. Amado (Thesis for Doctorate, Montpellier, 1912; *Archives Internationales de Laryngologie, d'Otologie, et de Rhinologie*, March-April, 1913).—It has long been recognised that in the operation for adenoids it is necessary for the sake of the hearing to pay particular attention to the fossæ of Rosenmüller. Amado, in his thesis, refers to the adhesions which may occur in these and other regions of the naso-pharynx whereby the movements which take place at the Eustachian orifices may be interfered with. Deafness, vertigo, tinnitus, pain may be caused by these adhesions. The treatment is operation, the adhesions being broken down by the finger or by other means. In some cases the effect, especially on vertiginous phenomena, is particularly pleasing. This paper deals with a simple matter, but it is a condition which, no doubt because of its simplicity, is often overlooked, and it is well to have it brought before us in the clear and full way treated by the author. It is not always easy to examine the naso-pharynx, even with the various pharyngoscopes; but, if these adhesions were more carefully looked for, it is quite probable that they would be found in a much larger proportion of cases than is thought.—W. S. SYME.

Books, Pamphlets, &c., Received.

The Archæological Survey of Nubia, Report for 1908-1909, by C. M. Firth. Vol. II. Plates and plans accompanying Vol. I.

Surgical Pathology and Morbid Anatomy, by Sir Anthony A. Bowlby, C.M.G., F.R.C.S. Sixth edition. Edited with the assistance of Dr. F. W. Andrewes. London: J. & A. Churchill. 1913. (10s. 6d. net.)

Lang's German-English Dictionary of Terms Used in Medicine and the Allied Sciences. Second edition. Edited and revised by Milton K. Meyers, M.D. London: J. & A. Churchill. 1913. (18s. net.)

How to Diagnose Small-pox: A Guide for General Practitioners, Post-Graduate Students and others, by W. M'C. Hanklyn, B.A.Cantab., M.R.C.S., L.R.C.P., D.P.H. With illustrations. London: Smith, Elder & Co. 1913. (3s. 6d. net.)

Acute Abdominal Diseases, including Abdominal Injuries and the Complications of External Hernia, by Joseph E. Adams, M.B., M.S.Lond., F.R.C.S.Eng., and Maurice A. Cassidy, M.A., M.D., B.C.Cantab., F.R.C.P.Lond. With 28 illustrations. London: Baillière, Tindall & Cox. 1913. (12s. 6d. net.)

A Text-Book of Surgery for Dental Students, by G. Percival Mills, M.B., B.S.Lond., F.R.C.S., and Humphrey Humphreys, M.B., Ch.B., B.D.S. Birm., L.D.S.Eng. Illustrated. London: Edward Arnold. 1913. (12s. 6d. net.)

Text-Book of Ophthalmology in the form of Clinical Lectures, by Dr. Paul Roemer. Translated by Dr. Matthias Lancton Foster. With 186 illustrations in the text and 13 coloured plates. Vol. II. London: Rebman, Limited.

Reports from the Laboratory of the Royal College of Physicians, Edinburgh. Edited by George Lovell Gulland and James Ritchie, M.D. Vol. XII. Edinburgh: Oliver & Boyd. 1913.

The Causes and Prevention of Deafness. Four lectures by J. Kerr Love, M.D., delivered under the auspices of the National Bureau for Promoting the General Welfare of the Deaf. Kennington: Wayre & Son, Limited. (1s., post free 1s. 2d.)

Report of the City of Glasgow Fever and Small-pox Hospitals, Belvidere, for the year ending 31st May, 1912, by Alex. Johnston, M.D., D.P.H., Physician-Superintendent. Glasgow: Robert Anderson.

Cunningham's Text-Book of Anatomy. Edited by Arthur Robinson, M.D., F.R.C.S.Ed. Fourth edition, enlarged and rewritten, illustrated by 1,124 figures from original drawings, 637 of which are printed in colours, and 2 plates. London: Henry Frowde and Hodder & Stoughton. 1913. (31s. 6d. net.)

Protein and Nutrition: An Investigation, by Dr. M. Hindhede. London: Ewart Seymour & Co., Limited. (7s. 6d. net.)

The Healthy Marriage: A Medical and Psychological Guide for Wives, by G. T. Wrench, M.D., B.S.Lond. London: J. & A. Churchill. 1913. (3s. 6d. net.)

A Course in Normal Histology: A Guide for Practical Instruction in Histology and Microscopical Anatomy, by Rudolf Krause. Translation from the German by Philipp J. R. Schmahl, M.D., New York. With 30 illustrations in text, and 208 coloured pictures. Part I. London: Rebman, Limited.

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDED 12TH JULY, 1913.

	Week ending			
	June 21.	June 28.	July 5.	July 12.
Mean temperature,	59·2°	56·7°	60·5°	56·3°
Mean range of temperature between highest and lowest,	15·5°	12·9°	18·1°	14·8°
Number of days on which rain fell,	3	4	1	2
Amount of rainfall, ins.	0·81	0·54	0·07	0·50
Deaths (corrected),	276	325	288	276
Death-rates,	14·1	16·6	14·7	14·1
Zymotic death-rates,	1·4	1·7	2·3	1·5
Pulmonary death-rates,	3·4	3·6	3·3	3·1
Deaths—				
Under 1 year,	44	56	54	41
60 years and upwards,	60	61	39	52
Deaths from—				
Small-pox,	...	...	...	...
Measles,	12	26	27	17
Scarlet fever,	1	...	3	2
Diphtheria,	4	1	2	4
Whooping-cough,	9	6	11	8
Enteric fever,	1	...	1	...
Cerebro-spinal fever,	...	...	...	2
Diarrhœa (under 2 years of age),	4	6	9	8
Bronchitis, pneumonia, and pleurisy,	48	45	36	41
Cases reported—				
Small-pox,	...	...	...	..
Cerebro-spinal meningitis,	1	1	1	1
Diphtheria and membranous croup,	31	21	30	30
Erysipelas,	14	16	33	17
Scarlet fever,	63	52	54	49
Typhus fever,	...	...	...	...
Enteric fever,	3	4	7	4
Phthisis,	38	35	44	50
Puerperal fever,	...	7	1	2
Measles,*	435	372	380	362

* Measles not notifiable.

Sanitary Chambers,
Glasgow, 30*th July*, 1913.

THE

GLASGOW MEDICAL JOURNAL.

No. III. September, 1913.

ORIGINAL ARTICLES.

THE OPERATION FOR ACUTE APPENDICITIS—PRIMARY CLOSURE OF THE ABDOMINAL WOUND.[1]

By J. GRANT ANDREW, M.B., C.M., F.R.F.P.S.G.,
Surgeon, Victoria Infirmary, Glasgow.

It is my intention in this communication to confine what I have to say entirely to the question of drainage in the operative treatment of all cases of acute appendicitis. Though I have very strong convictions on the subject of *immediate* operation in every suspected case of appendicitis, a subject which has been so recently before the Royal Society of Medicine, I refrain from introducing the subject here other than to say that when the day arrives, as I am certain it will, when every case of suspected appendicitis will be operated upon within the first twenty-four hours, there will be no need for a paper such as this. No case will be allowed to go on to the stage of gangrene, of perforation, of abscess, and every wound will be primarily closed without drainage. Owing largely to difference of opinion amongst ourselves, we, unfortunately, have not yet reached that day, and the question of how far we can safely go in closing an infected peritoneum is still a debatable one.

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[1] Read at a meeting of the Medico-Chirurgical Society of Glasgow, held 7th March, 1913.

As many of you know from previous communications to the medical press,[1] I have interested myself in this subject for some time, and my object in again bringing this matter before you is to give you my experience up to date. For the past two and a half years I have adopted a routine method in the operative treatment of every case of acute appendicitis.

Every case has been operated upon at once when seen by me.

The gridiron method of approach has been employed without exception, and in very few has it been found necessary to divide the internal oblique muscle at right angles.

In this communication I include in the list of cases only those which come under one or other of the following groups:—

1. Those in which the appendix is gangrenous, either in whole or in part. Under this heading are included those cases where no protection exists from infection of the general abdominal cavity, and in which a local or general infection of the peritoneum is already present, and, also, those cases where a perforation of the appendix has occurred with a coprolith projecting through the seat of the perforation or entirely extruded and lying free.

2. Those cases in which there is a localised abscess completely shut off from the general peritoneal cavity, the appendix being the *fons et origo mali*, and in varying degree of inflammatory destruction.

No case is included in the list which does not come under one or other of these groups. All simple catarrhal cases are excluded, all "quiescent" cases are debarred. The exclusion of these cases naturally influences the mortality-rate. If all cases of appendicitis operated upon by me during this period were included the death-rate would not exceed 3 per cent.

It is my desire rather in this communication to prove to you that drainage in these cases of gangrene and of abscess is not necessary and often dangerous. Drainage can be dispensed with if the following two conditions are fulfilled:—(*a*) Removal of the cause, (*b*) thorough closure of the cæcal opening. If these conditions are fulfilled, then I maintain that I have proved, as a result of a critical examination of these 85 cases, the records of which are before you, that it is possible to obtain primary union where the very worst possible intra-abdominal conditions prevail, and with less risk than if drainage were adopted either by tube or by packing.

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[1] *British Medical Journal*, 28th October, 1911; *ibid.*, 25th May, 1912.

Let us consider briefly the various headings of the summary of the cases in your hands. The cases include those treated in private as well as those treated in hospital between June, 1910, and February, 1913.

Sex.—There are 47 males and 38 females, a total of 85 cases.

Age.—The age of the cases varies from 5 to 66 years of age; the majority of the cases are in the earlier decades of life.

Date.—The period of residence either in a nursing home or in the hospital is of little value, for many of the cases were kept longer or sent home earlier according to the circumstances of the patient.

Duration of the illness.—The duration of the illness varied from fourteen hours to as many days. The temptation to keep the case until there is some evidence of its severity is too apparent, and even the most rabid opponent of operation is agreed that if operation is to be performed at all during the acute stage then the sooner the better.

Condition of the appendix or the peritoneum.—(*a*) In the greater proportion of the cases the appendix was gangrenous, either in whole or in part, and quite unprotected by adhesion from the general peritoneal cavity.

In no less than one-third of the cases the appendix had perforated, and a coprolith was either lying free in the general peritoneal cavity or in process of extrusion.

The accompanying peritonitis was either local or general: it was quite impossible in some of the cases to be certain how far the infection had spread. Though not stated in the summary of the cases, if any doubt existed as to the involvement of the pelvi-peritoneum a small suprapubic incision was made, and the pouch of Douglas mopped out.

(*b*) In a smaller proportion of the cases a localised abscess was present, completely shut off and usually very foul-smelling.

In almost every case the offending appendix was removed, and every care taken to effectively close the cæcal attachment.

Iodoform powder was dusted over the stump in the earlier cases: iodine or iodoform emulsion, either alone or combined with the subcutaneous injection of a *bacillus coli* vaccine, in the later cases.

Primary closure.—In 80 out of the 85 cases the wound was primarily closed without drainage. The cases drained were those in which the appendix could not be found or those in which the stump could not be effectively closed. The subsequent introduction of an intra-abdominal drain at the seat of the appendix was necessary in only 2 cases, and in these I was in doubt as to the satisfactory closure of the stump.

Wound infection.—Fifty-seven out of the 85 cases healed primarily. In 27 there was some infection of the wound: in 2 the wound was restitched. In no case was a drainage tube necessary for the wound alone. In 3 of the cases which died the wound had healed or was in process of healing without sepsis, and that with a pronounced peritonitis in progress.

Mortality.—There were seven deaths. In 1 case death occurred six hours after admission: this case was drained. In every case save one death was due to general peritonitis, either in existence at the time of the operation or becoming general subsequent to operation.

The question of drainage.—When I first advocated (in the Section of Surgery at the Birmingham meeting of the British Medical Association two years ago) primary closure of the abdominal wound, if the cause of the peritonitis be effectively removed, I received very little support, though several surgeons wrote to me afterwards expressing approval. Mr. Cuthbert Wallace, of London, stated in a letter to me that he was working on similar lines, and now we have the excellent address of Mr. A. E. Barker, of University College Hospital, published in a recent issue of the *British Medical Journal.*[1] I am as firmly as ever convinced that if general peritonitis is established, drainage will not assist in checking it, and if a local peritonitis is present the removal of the cause is sufficient.

The employment of packing in these acute cases is to me an abomination: it encourages wound infection, it encourages the formation of a fæcal fistula. It is very striking that no case of fæcal fistula has resulted where the wound was primarily closed, and where the cæcal attachment of the appendix was efficiently secured. Packing necessitates frequent dressing, and often requires an anæsthetic for its removal and renewal. It weakens the scar and often leads to the occurrence of a ventral hernia, and, moreover, is not safer than when the wound is primarily closed. I can speak with knowledge on these points.

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[1] *British Medical Journal*, 18th January, 1913.

What objections can be urged against closure of the wound without drainage in these cases?

1. A peritonitis which has been confined to a circumscribed area around the appendix might become general. In my opinion, if the resisting powers of the tissues themselves be not sufficient to prevent extension of the peritonitis, drainage will not assist them.

2. Extension of the septic process may occur along the colon or into the pelvis, and a subdiaphragmatic abscess form as a result of the former, and a pelvic abscess as a result of the latter. Certainly each of these conditions may happen, but each has happened when free drainage has been employed. The same applies to septic thrombosis and to pyæmia.

3. A localised abscess may again form at the appendix region itself. I have not met with this when the appendix was removed and the cæcal opening satisfactorily secured.

4. *Infection of the wound.*—In the earlier group of cases some infection of the wound occurred in about 50 per cent of the cases, but since the employment of vaccine and of the iodoform emulsion, primary union is obtained with few exceptions.

The advantages of primary union to the patient are so apparent that they need not be elaborated.

One word in regard to after-treatment in these cases. I do not think it advisable to hasten the administration of a cathartic: if there be some distension or peristaltic pain, a turpentine enema usually gives relief. It is best to allow a week to elapse before the usual post-operative laxative is given.

My thanks are due to my present house surgeon, Dr. Thomas Martin, and to Mr. M'Goveney, who acted for Dr. Martin in his absence, for their assistance in revising the clinical reports.

INTESTINAL TOXÆMIA IN ITS RELATIONSHIP TO OBSTETRICAL AND GYNÆCOLOGICAL AFFECTIONS.[1]

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In the recent discussion on alimentary toxæmia in the Royal Society of Medicine it would seem that the majority of diseases have their origin in the abdominal viscera, and that the various special branches of medicine are merely concerned with the treatment of the symptoms of deranged metabolism. Even in diseases of the eye we are informed that much can be done by careful attention to the condition of the alimentary tract. It therefore seems to me that in our diagnosis and treatment of conditions associated with pregnancy and the pelvic organs we must pay special attention to the whole digestive tract before proceeding to the employment of any radical operative measures.

In many of the cases of pathological conditions of pregnancy and of gynæcological affections it may be more correct that we should look upon such affections as complications of intestinal stasis, and not as diseases having their primary origin in the reproductive organs.

Anything I may have to say on the subject of intestinal toxæmia will be well known already; but there are several points to which I wish to draw your attention, as they have been of interest to me in my examination and treatment of patients, and about which I shall be grateful for a discussion. In my personal experience the whole subject of intestinal conditions in their relationship more especially to gynæcological conditions is one of the greatest importance, not only with regard to the general medical treatment, but also to the after-histories of patients who have been operated upon for gynæcological affections. It must have occurred to most gynæcological surgeons, on examination of some patients after so-called successful operations, that there is very little improvement in the general condition of the patient, even although the local effect of the operation leaves nothing to be desired. The solution of the problem is often to be found in the intestinal tract, either due to the presence of a previous and co-existing toxæmia or to some condition in the abdomen occurring subsequently as a result of the operation itself.

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[1] Read at a meeting of the Glasgow Obstetrical and Gynæcological Society, 23rd April, 1913.

As a preface to the subject as it specially concerns the gynæcologist and obstetrician let me outline the most important factors in the production of intestinal toxæmia.

I. *The teeth and gums* are a common source of infection. Pyorrhœa alveolaris has its origin in putrefactive processes, the result of bacteriological infection of the teeth. How familiar we all are in hospital out-patient departments with the unhealthy state of the mouths of so many women who seek relief from gynæcological affections. The unbrushed teeth, with particles of decomposing food lying round the gums, and pockets of pus which can be exposed by pressure. In many instances the teeth, covered with tartar, are so loose in their sockets that they can be easily moved by the examining finger. These teeth are an unlimited source of bacteriological infection for the poisoning of the badly masticated food which is swallowed into the stomach, in turn infecting that organ itself. If there is a thickened condition of the nasal mucosa, or some other obstruction, which may prevent nasal respiration, we have an aggravation of the condition. The poisonous substances swallowed with the food and saliva may, in many cases, have no appreciable effect upon the patient, but when they are associated with other conditions affecting the abdominal or pelvic viscera they become a veritable menace to the health and well-being of the individual.

II. *Infection from the stomach and intestine.*—Hospital patients more especially are drawn from a class who live in badly ventilated surroundings, their occupation often leading to a sedentary mode of life; the diet is unsuitable and badly cooked, and constipation is the rule rather than the exception. In this way there is a predisposition to the absorption of products from the intestine which are the result of putrefactive bacteriological or chemical processes occurring in the presence of or as a result of imperfect metabolism of ingested foodstuffs. The evidence of such conditions is to be found in the symptoms of chronic dyspepsia. If peristalsis is inactive, or if fæces accumulate in the bowel, then absorption takes place much more readily and the symptoms are more manifest.

III. *Defects in the mechanics of the abdomen.*—From the point of view of the gynæcological surgeon this is a very important factor in the causation of intestinal toxæmia, and one to which we must direct much more attention in the future than we have done in the past.

The abdominal forces which keep the viscera in a state of physiological equilibrium are to be found mainly in the vascular, peritoneal, and ligamentary attachments of these viscera, in the pressure from the abdominal walls and pelvic floor, and in the pressure of organs upon each other. The factors which predispose to the weakening of these forces are to be looked for, as a rule, in congenital conditions or in those occurring in childhood. The following conditions may be considered as of importance in the etiology of the displacements of the abdominal and pelvic viscera:—

1. Congenital enteroptosis. Laxity of the ligamentous attachments due to faulty diet in infancy. This latter condition can be observed in young children suffering from rickets. Bad postural conditions, more especially during school hours, giving rise to a condition of intestinal stasis from pressure of the thorax upon the abdomen.

This is especially marked in the flexures of the colon, although no evidence of the condition may show itself until some later pathological condition becomes superadded.

2. Bands of adhesions, mesenteries, and kinks, due to the erect attitude and postural conditions, lead to intestinal stasis (Arbuthnot Lane). The bowel is imperfectly emptied, and there is dropping of the viscera, more especially marked in the colon. Toxæmia is not necessarily a sequence of intestinal stasis. These bands and mesenteries are frequently congenital in origin, and may also be acquired, according to Mr. Arbuthnot Lane, by the gradual thickening of portions of the peritoneum forming adhesions, which are not to be confused with those of inflammatory origin. On account of these bands imperfect emptying of the bowel occurs, absorption takes place as a consequence, and they are therefore to be looked upon as the causal factor in the production of many so-called constitutional diseases; the chief source of infection being in the large intestine.

3. *Downward pressure* of the abdominal viscera as the result of wearing tight corsets and badly-fitting bands or belts. The constriction in the umbilical region from clothing,

even in women who do not wear corsets, is a source of loss of function on the part of the colon. Occupations, such as prolonged bending or stooping, as in sewing or writing, cause downward pressure upon the abdominal viscera and constriction of their blood-supply. Women are more prone to enteroptosis than are men. Glénard found in the patients attending Vichy that 1 in 5 of women suffering from dyspepsia had displacement of the abdominal viscera. The proportion among men was only 1 in 40. Thoracic and respiratory movements are impeded by the wearing of corsets and tight clothing; pressure is therefore exerted upon the abdominal viscera, causing descent of the intestine into the lower part of the abdomen or pelvis, with consequent congestion of its walls and stasis of its contents. Intestinal peristalsis is interfered with, and fæcal accumulations are the result. This pressure in turn leads to congestion of the pelvic viscera, which may only give evidence of such by the symptoms of dysmenorrhœa or menorrhagia becoming only noticeable at the time when cyclic changes are taking place in connection with the reproductive organs. It has been long taught by gynæcologists that displacements of the uterus are primarily due to faults in the uterus itself, and much attention has been paid to the treatment of such conditions. Flexions and torsions in the uterus may, in many cases, give rise to marked symptoms; but increasing experience in the investigation of this subject has made me come to the conclusion that uterine displacements are frequently only an incident in a chain of conditions which can be directly traced to the intestinal tract, and that treatment, more especially when dealing with unmarried women, should be directed to the abdominal viscera as the probable source of symptoms, attention only being paid to the examination of the pelvic organs when every other condition has been excluded by careful examination and treatment. The days are past when the gynæcologist did not consider his examination complete unless he had made use of the speculum and sound as an aid to the diagnosis of every abdominal and pelvic condition.

4. *Pregnancy and parturition.*—The distension of the walls of the abdomen during repeated pregnancies is a factor in bringing about a downward displacement of the viscera, and also the relaxation of the ligamentous attachments of the pelvic organs. Parturition is a factor by means of the lacerations, more especially in the pelvic floor, which in turn lead to infective processes in the abdominal and pelvic

peritoneum, and consequent formation of obstructive bands and adhesions. The mechanical effect of lacerations of the pelvic floor also requires consideration, but it is doubtful how far a lax vaginal outlet is a factor in the production of intestinal toxæmia.

IV. *Gynæcological operations*, more especially with regard to their after-effects. In the early days of gynæcological surgery it was considered so wonderful to be able to remove large, solid, and cystic growths of the reproductive organs that little attention was paid to anything but the immediate successful removal of such tumours, and the question of detailed technique was little considered. Of late years, however, it has been impressed upon the surgeon that numerous and perhaps long delayed after-effects are to be found leading to much discomfort on the part of the patient. The chief causes of intestinal toxæmia as the result of operations are sepsis giving rise to adhesions, and bands between the bowel, omentum, and other viscera. Adhesions of the bowel and peritoneum to raw surfaces, such as the pedicles of tumours when left uncovered, are also a source; secreting surfaces, with the possibility of infection from mucous cavities, left to discharge their contents into the peritoneal cavity. As examples of such we have the uterine stump in supra-vaginal hysterectomy or amputations of the Fallopian tube; also imperfect suturing of the mesentery in operations for intestinal anastomosis, leading to dropping down of loops of intestine; imperfect suturing and septic conditions of the abdominal wound, leading to hernial protrusions and relaxation of the abdominal muscles. It may be found, on enquiry into the after-history of cases of operations, that the patient complains of pain in the abdomen, dragging sensations, sometimes nausea and vomiting, all of which are directly traceable to the adhesive bands dragging, more especially upon the large intestine. Sometimes the abdomen has to be re-opened in order to free such adhesions. This is especially marked in cases of operation for appendix complications of an infective nature. A condition of chronic ileus may occur, associated with pain; and it is well known that the condition of acute ileus with intestinal obstruction is much dreaded by operators in cases of Cæsarean section, this condition, in the majority of cases, being due to septic infection.

V. *Hepatic and renal insufficiency* is a consequence rather than a cause of intestinal toxæmia. Chemical and bacteriological products absorbed from the intestine are rendered innocuous by hepatic functional activity, and by elimination by the renal system. Should, however, these products become excessive in amount, the liver and kidneys are overworked, and a general toxæmia ensues. Degeneration of the tissues may follow, not only in the organs themselves but in the body as a whole. Gynæcological conditions are found to be associated with gall-bladder complications, and it is known that this organ is the seat of coliform infection from the intestine. It may be here mentioned in passing that intestinal toxæmia may be the result of deficient function on the part of the ductless glands, more especially the thyroid and pituitary. The ovary, also, has some influence in its counteraction, as evidenced by symptoms of intestinal toxæmia occurring at the menopause, when ovarian function ceases and the equilibrium of the thyroid and other internal secretory organs has not become properly established. It has been found by Nicholson and others that thyroid extract administered to eclamptic patients has been of benefit on account of its antitoxic properties. I can personally testify to its value in the prophylactic treatment of cases of threatened eclampsia.

VI. *Toxæmia due to unknown origin.*—This is specially considered in the etiology of the toxæmias of pregnancy. It is difficult in the present state of our knowledge to say that such conditions as eclampsia, acute yellow atrophy, and severe vomiting of pregnancy are due to absorption from trophoblastic tissues, or due to a pre-existing intestinal condition complicated by the addition of pregnancy, and only manifest when pregnancy occurs. We cannot, therefore, do more than theorise, as our knowledge of the normal metabolic processes of pregnancy is still so scanty. It is common knowledge that the operative termination of pregnancy in toxic conditions does not always cure the patient. Subsequent pregnancies may confer an immunity upon the individual, and thus explain the less frequency of toxæmic conditions among multiparæ.

Toxæmia is observed in patients at the menstrual periods, where headache, nausea, and vomiting are marked symptoms. It is, however, difficult to differentiate such conditions from toxæmia due to ovarian secretion, although clinically we find marked improvement in such cases after careful attention has been paid to the intestinal tract. Nervous disorders as a source of intestinal toxæmia are difficult to classify, as it is still a matter of controversy how nervous derangements, such as insanity, are to be traced directly to the absorption of products from the alimentary tract.

Symptoms of intestinal toxæmia.—These are furred tongue, dryness of the mouth, with unpleasant taste, especially in the morning. Toothache and neuralgia: rheumatic pains. Headache, sometimes resembling migraine, with nausea and vomiting. Dyspepsia, with flatulence and sometimes pain after food. Constipation and hæmorrhoids. Constipation should be looked upon as a symptom and not as a factor in the etiology of intestinal toxæmia.

Leucorrhœa, menorrhagia, and dysmenorrhœa are frequently present, due either to direct mechanical pressure upon the uterus and its appendages or to the absorption of toxic products by means of the blood-stream, or even to the direct infection with organisms, such as the coli bacilli from the intestinal tract. This condition of stasis of the uterus and appendages can be verified at abdominal operations by finding an enlarged congested uterus, œdematous or cystic ovaries, and varicose conditions of the veins of the broad ligament. Anæmia is frequently found associated with toxæmia, and is said to be caused by the hæmolysis of the red blood corpuscles by the products of intestinal putrefaction. Constitutional symptoms, such as lassitude, fatigue, and neuroses, are well-known symptoms of intestinal conditions due to the absorption of aromatic substances, such as indol, from the intestine. Various skin affections are also evidence of intestinal absorption, and are aggravated by the cyclic changes in the reproductive functions.

Method of examination.—In the examination of patients coming under our notice as so-called gynæcological cases because of pelvic symptoms, we must keep clear in our minds that we are treating the patient and not the disease, and that though gynæcologists, and therefore necessarily somewhat restricted in outlook, every condition and symptom must be carefully considered before finally deciding that the reproductive organs are at fault. A thorough investigation of the whole alimentary tract must be made, and a diagnosis of pelvic condition only arrived at when there is a marked lesion, or when every other factor has been eliminated. Even when a gross lesion is present, such as a fibroid of the uterus, we must remember that such a condition may be associated with, or may, indeed, be a factor in the causation of intestinal toxæmia, and that removal of the source does not always effect a complete cure unless attention is paid to other organs. The teeth should be carefully examined, and evidence of infective processes made out: the skin observed for dilated vessels and eruptive conditions. Pigmentation of the skin is due in many instances to intestinal toxæmia: this is observed in the complications of pregnancy. The thyroid should be examined for enlargements, as we frequently come across this condition in gynæcological affections. Intertrigo is frequently found in stout women in the lower abdominal fold.

Abdominal examination.—The patient should first be examined lying down, and repeated examination may be necessary before a diagnosis can be arrived at. In cases of obstinate constipation where fæcal accumulation is suspected it is advisable to examine the abdomen before purgation has been employed: in this way localisation of the fæcal masses can be made. Results can be compared at a subsequent examination after the bowel has been emptied. Fæcal accumulations as an evidence of intestinal stasis are frequently not observed when we examine patients under anæsthesia who have been previously prepared by rectal enemata. The irregularity in contour of the abdomen is to be noted, and, if thin walled, peristalsis may be seen. The subjects of intestinal toxæmia are not always stout women with lax abdominal walls, but they are frequently thin women with long chests. Indeed, it is said that thin long-chested patients are more typical of the condition (Howard Kelly). Palpation of prominent or tender areas is to be directed more especially to the gall-bladder and appendix. Fæcal masses may be felt in the colon and its flexures; they are movable to a certain extent, and are not tender on deep pressure. Splashing and gurgling sounds may be found on movement in the region of the stomach and colon. Displacement of the kidneys may be examined for in this posture, but this method is not so satisfactory as in the sitting or erect posture. The patient is next examined in the erect attitude, and I cannot too strongly emphasise the advantage of this position in cases of displaced abdominal viscera. When the patient is on her back I frequently find that beyond enlarged areas on percussion, such as in dilatation of the stomach, I have not much idea of the condition of the viscera. In the erect attitude, one in which the patient complains of most of her symptoms, we can tell the extent of displacement and the descent of viscera. Glénard's belt test I have found of value. On standing behind the patient and lifting up the abdominal viscera with both hands, the patient asserts that she obtains relief of her symptoms. In accurate examinations, more especially for demonstration purposes, the various abdominal organs may be outlined by the dermograph in the recumbent and erect postures, and a comparison of the results made. The erect attitude I have found of value in the diagnosis of ascitic fluid. In the pelvic bi-manual examination the various gynæcological conditions are made out, also the condition of the sigmoid and rectum with regard to fæcal accumulations. If no definite diagnosis can be made as to the localisation of intestinal stasis the rectal tube may be employed to inflate the bowel. Finally, barium or bismuth may be administered by the mouth or rectum, and examination of the abdomen made by means of the *x*-rays. In this way the localisation of stenosis or kinks can be made, and the degree and rate of peristaltic action.

The *diagnosis* of intestinal toxæmia, apart from other conditions, is somewhat difficult, as it is marked by symptoms which seem to point directly to organs outside the abdominal cavity. A careful history of the symptoms must be taken and a thorough examination made. It is easy if we have obvious conditions, such as decayed teeth, loaded rectum, and dyspeptic troubles. The symptoms of intestinal toxæmia may only appear when some particular group of organs, such as the reproductive, becomes affected as a consequence of the intestinal condition, and it is here that the difficulty lies in the diagnosis and treatment of such. Unless some gross lesion requiring direct attention is to be found in the pelvis, it is safer to try the effect of treatment of the intestinal tract as an aid to a differential diagnosis. It will be found that many so-called gynæcological conditions, such as oöphoritis or endometritis, will be cured without any local treatment, and that these conditions are only secondary to the stasis of the intestine. In pregnancy the previous digestive history of the patient is of importance, also the thorough examination of the alimentary system. In this way some light may be thrown on the question of the advisability of terminating the pregnancy by operative measures. For such conditions we require much further tests than merely the ammonia index of the urine. Perhaps the investigation of the blood serum may prove of value in the diagnosis of these conditions.

Treatment.—General: I can only repeat what I have already said. Treat the patient and not the disease, and use any method of treatment which may be of benefit to the condition. The first essential in taking up the treatment is to have the mouth put in a healthy condition. The teeth should be removed or their cavities cleansed and filled by a dentist. The gums should be disinfected by applications of tincture of iodine or by ionic medication. I took a series of gynæcological patients in my out-patient clinic, who were suffering from dyspeptic symptoms, and treated them with vaccines made from paradontal streptococci as recommended by Sir Almroth Wright. My results were good. Many of the patients stated that they were free from dyspepsia and had a better appetite for food. Careful dieting should be advised and enquiries made as to the sufficiency of carbohydrates in the food. In my experience of the dieting of such patients, I have found that dry meals are often of benefit, copious draughts of water being taken between meals and in the early morning. Plentiful supply of fat in the form of butter is of value. The restriction of tea, and its substitution by some of the digestive cocoas is of benefit. Green vegetables are difficult of digestion where intestinal stasis is present, giving rise to discomfort from flatulent distension of the bowel. In some cases of marked toxæmia, even of the chronic variety, it is necessary to put the patient on a milk diet for several weeks. In severer forms specially regulated diet as to time and quantities must be advised. Small and frequent meals are of more benefit than large meals at long intervals.

It is almost unnecessary to call attention to the value of baths, either medicinal or plain, and residence at spas. Exercises with the view of strengthening the abdominal muscles are of great value. Such simple exercises as the following I recommend:—Lying flat on the floor and raising the trunk to a sitting posture without the aid of the arms. Lying flat and raising the legs to a perpendicular position. Standing straight with the feet close together and bending forwards until the fingers touch the ground or as near as possible. These exercises are best performed in the early morning after the bath, and each should be repeated about a dozen times. Outdoor exercise with a view to increased oxidation of the tissues is to be recommended. I cannot see that the fact of women going in for athletics should be viewed by some members of the profession as almost a national calamity. There is no doubt that a woman with properly developed abdominal muscles and healthy tissues will make a better mother than a poorly developed one, and there will be less fœtal mortality where toxic conditions are absent. I have found in practice that much can be done in the prevention and treatment of hæmorrhoids by advising washing after defæcation. The enlarged veins frequently become a source of discomfort when they become infected from dried fæcal matter round the anus. Advice as to the avoidance of tightly fitting corsets or belts should be given to patients.

Mechanical appliances are of benefit in many cases in the form of abdominal belts or binders, the object of such being to prevent the downward pressure of the viscera and lend support to the abdominal walls. The main pressure should be applied below the umbilicus, and, with a properly fitting belt, the patient should not regret having to discard her badly fitting corset; the gain in her appearance is to her advantage. In women of the hospital class, I advise a broad binder of new flannel, carefully applied with safety pins. One must never forget to inform the patient that the belt or binder is to be applied when she is lying down, otherwise, if put on when in the erect attitude, the abdominal viscera will be maintained in their prolapsed position. This is a point that is frequently overlooked.

In the medicinal treatment of intestinal toxæmia, I cannot lay too much stress upon the avoidance of frequent doses of purgatives. In chronic cases I do not employ them as a rule. Scouring of the intestinal walls by means of magnesium sulphate for chronic constipation is the treatment of a symptom without treating the source. Occasionally, doses of calomel and other drugs have to be given for diagnostic and surgical purposes, and in acute conditions. I am referring more especially to cases of long standing and obstinate stasis of the intestine. I have had excellent results from the following plan:—

The patient, on rising in the morning, is advised to take a tablespoonful of pure liquid paraffin about half an hour or more before breakfast. This acts as a lubricant to the intestinal wall, and prevents septic absorption. After breakfast the patient must go daily to stool whether defæcation takes place or not, and in time she will find that a regular movement of the bowel will be set up.

I have been very well satisfied with the results of paraffin administration, which I have employed in practice for over a year. Sometimes an additional dose is given at bedtime if required. Natural mineral waters can be given, and in cases of fæcal accumulation a small enema of olive oil at bedtime is of benefit. I have employed the use of pituitary extract on occasions for chronic constipation, and have found it of value, both as given hypodermically and by the mouth. In our ward cases after operation we have found it of inestimable value in causing the bowels to move, and also in counteracting the vomiting after anæsthesia.

In the performance of gynæcological operations, as a prophylaxis of subsequent intestinal stasis, rigid asepsis must be employed. All raw surfaces must be carefully covered with peritoneum, and secreting surfaces cauterised or closed. All gaps in the mesentery or peritoneum must be carefully sutured and the omentum replaced. In the closure of the abdominal wound numerous layers are employed, special attention being paid to the muscle layer.

In the treatment of intestinal toxæmia by operative measures, there exists considerable divergence of opinion. It should be admitted, however, that where an obvious lesion is present, or where all other measures have been tried and failed, then due consideration should be given to the benefit to be gained by short-circuiting operations between the small and large intestine, or even removal of part of the latter.

Recently I have had the privilege of seeing some of the work done by Mr. Arbuthnot Lane, work with which his name has been closely associated. I was much interested in the beneficial results of intestinal operative measures upon cases having their origin in intestinal toxæmia. There is no doubt that in the future this condition will be given greater prominence in gynæcological practice, and less attention will be paid to the local applications to the pelvic organs so much employed by gynæcologists hitherto.

So many diseases are due to defective metabolism, or malnutrition, as it is generally termed, and so limited is our knowledge as to the normal processes of metabolism, that it is not wise to dogmatise too emphatically upon the etiology of any condition; but in the future we may find in the intestinal tract the possible solution of the origin of many diseases of the uterus and its appendages. Our work hitherto upon the histology of pathological conditions is only an intermediate link in the chain, as the etiology of so many pathological affections is unknown.

MINERS' NYSTAGMUS: THE STAGE PRIOR TO NYSTAGMUS.[1]

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During the last few years a great amount of attention has been devoted to the condition known as miners' nystagmus, and much important research devoted to the elucidation of the etiology of the disease. Since it was placed, in 1907, upon the Schedule of the Workman's Compensation Act of 1906 there has been a rapid increase each year in the number of miners claiming compensation. It has, therefore, been of the greatest importance to remove, if possible, whatever causes may lead to the development of the disease. For a number of years the myopathic theory of the late Simeon Snell was widely accepted. According to this view the nystagmus arises from a spasm of the elevators of the eyes. Many reasons have led to the abandonment of the hypothesis. Except in coal-mines, the disease is completely unknown. Men work in as cramped positions in the metalliferous mines as in coal-pits, and their hours are as long as colliers'. It is not found among workers whose occupation requires looking upwards, as ceiling decorators. The theory singles out one symptom of the complex symptomatology, namely, oscillation of the eyes, and it does not account for the twitching of the eyelids, the nodding of the head, or the tremor of the hands which may be seen in severe cases. The nystagmus may be rotatory in one eye and vertical in the other, and even vertical in the one and horizontal in the other. It is impossible to conceive that a hypothesis of cramp could cover such varied symptoms.

Recent investigators have almost all come to the conclusion that feeble illumination is the most important, if not the only, factor in the etiology of the affection. The disease was first recognised some time after the introduction of safety lamps into coal-pits. It is practically unknown in mines where candles are used, and in the few cases which occur among miners in these pits it is generally found that the men have previously worked with lamps in other pits. Candles often give a light equal to one candle-power, and if the wick is spread out it may equal two candle-power. On the other hand, a safety lamp rarely gives more than half a candle-power, and when the lamp is dirty the illumination is further decreased. The collier is able to place the candle much closer to his work than he can the lamp, as the latter has to be placed out of reach of his pick. Remembering that the light is reduced by the square of the distance, it is easily understood how much the efficient light of the lamp becomes diminished by removing it even a foot from the coal face.

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[1] Read at a meeting of the Medico-Chirurgical Society of Glasgow held on 2nd May, 1913.

Llewellyn,[1] Tyndall Research Mining Student of the Royal Society, found that out of 600 consecutive certified cases 591 had worked with safety lamps, and but 9 had used candles only. Among 7,850 miners in five pits the percentage of nystagmus cases per pit was inversely as the candle-power of the lamps used in the pits. Among 12,000 miners he found that the nystagmus was six times more frequent in the safety lamp pits than in the candle pits. He also found that the total light given out by a candle is 0·635, while a lamp gives 0·14, the proportion being 4½ to 1. He states that the average illumination of the coal face in five naked light pits was 0·09 foot candle, and in five safety lamp pits 0·018 foot candle, giving a relative proportion of 5 to 1.

Elworthy[2] believes that the absence of colour in the coal-mines is an important factor in producing nystagmus. He has devised the chromophotic index. It is based upon the candle-power of the lamps employed, the surface brightness of the coal, and the colour relief of the roof, the wall, and the floor at an average place in the mine. "The chromophotic index is found by multiplying the candle-power of the light used at a working place by the surface brightness—in foot candles—of the coal (or ore) at a 'mean' place by the colour relief. Then, in order to get a convenient figure, move the decimal point five places to the right." The colour relief is found by comparison of cards with mixtures of black and white in percentages of white. Further details should be obtained from the original paper. In mines not producing nystagmus the chromophotic index was over 4,000, and in all the mines producing nystagmus which he examined the chromophotic index was under 500, and it was in inverse proportion to the rate of nystagmus.

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[1] T. L. Llewellyn on "Miners' Nystagmus (Neurosis)," *The Ophthalmoscope*, 1912, vol. x, p. 696; *Miners' Nystagmus*, London, The Colliery Guardian Co., 1912.

[2] H. S. Elworthy, "Colour and Light in relation to Miners' Nystagmus," *The Ophthalmoscope*, 1912, vol. x, p. 688.

It seems probable that other factors enter into the production of miners' nystagmus, because workers in photographic plate production spend a great proportion of their time in the dark, and do not develop nystagmus. It is possible that the hydrocarbons or the ultra-violet rays which are given off by the lamp, or part of the gases of the coal-mines, may be of some importance. Some writers have considered that astigmatism is also a part of the etiology.

In opening the discussion on miners' nystagmus at the Oxford Ophthalmological Congress last summer, Butler[1] raised the question whether the disease can be present without nystagmus. He demonstrated three patients, in only one of whom were traces of nystagmus discovered at a late stage. The men were colliers, and each complained of being dazzled by lights, and of the lights of the mine dancing or jumping up and down. Hemeralopia, night-blindness, and photophobia were severe in the cases without nystagmus. Twitching of the lids was present in each case, and one had nodding of the head and another had twitching of the neck muscles. Visual acuity was diminished without obvious cause. He considered the muscular twitching and tremor as the essential symptom in the cases. Indeed, it is the only objective sign, as the other symptoms were entirely subjective. The complaint of lights dancing might have been due to a nystagmus occurring in the mine, or simply to the rapid twitching of the eyelids.

I wish to bring forward a fourth case. A well-known gentleman in Dumfriesshire was sent to me in 1908 by Dr. M'Kerrow, of Ayr, on account of severe vertigo. He complained of being dazzled by lights and of staggering when in the street after dark. He also complained of hemeralopia. The vertigo came on at all times, but especially on coming into the light. Careful search failed to elicit nystagmus, but unfortunately the special methods of rotation in a dark room, or putting the patient into the miner's posture while at work, were not employed. He was well nourished, muscular, and a sportsman, with no signs of a nervous disposition. Diplopia was absent, the optic nerves were normal, and there were no signs of brain tumour. I understood that he was a banker, and after correcting his astigmatism, I advised complete rest from business, and sent him to the south of France. He improved rapidly, but while passing through London on his return a relapse occurred, and he was taken to a London oculist, who sent him away for another three months. I did not see him again until 2nd January of this year—*i.e.*, after an interval of four and a half years—when he came to see me about his glasses. He said that although the giddiness had not recurred, he still had trouble in the dark at night. In the town the lights made him stagger and go, as he said, as if he were drunk. On my enquiring if he had ever been down a mine, he said that he had been for a number of years a mine manager and had been constantly in the pits, but that he had scarcely been down a mine during these last four years.

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[1] T. H. Butler, "Miners' Nystagmus," *The Ophthalmoscope*, 1912, vol. x, p. 680.

There is little doubt this patient suffered from a type of miners' neurosis, and that if he had had to continue working in the mines nystagmus would have developed. In fact, it is probable that it did occur when he saw the lights jumping up and down in the mine.

Several writers have suggested that, as this disease is confined to the collier, and as the associated symptoms point to the involvement of higher centres of co-ordination, the disease should be termed coal miners' neurosis. No formal agreement was reached on this point, however, at the Oxford discussion. Among others, Weekers,[1] of Liège, holds that nystagmus is not a symptom of neurosis, but that the neurosis is superimposed on the nystagmus. He considered nystagmus to be the essential symptom.

Weekers[2] has further investigated the relationship of hemeralopia to this disease. He found two groups of cases. In the first there is an excessive delay, but the normal degree of retinal adaptation is reached after entering a dark room. In the other group there is excessive delay, but the retinal adaptation when developed falls short of the normal. There is no parallelism between the intensity of the oscillation and the disturbance of the retinal adaptation, but a parallelism exists between the latter and the subjective discomforts complained of by the patient. He therefore gives a warning against the error of regarding excessive complaints with moderate nystagmus as being an attempt at malingering.

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[1] L. Weekers, "Employment Nystagmus and Neurosis," *La Clinique Ophtalmologique*, 1910, Tome XVI, p. 538.

[2] L. Weekers, "Researches upon Retinal adaptation among Miners in Professional Nystagmus," *Bull. de la Société Belge d'Ophtalm.*, No. 29, 1910; ref., *The Ophthalmoscope*, 1911, vol. ix.

In a paper[1] which I read at a meeting of this Society four years ago, I attempted to show that nystagmus cannot be explained, except on the view that there is a disturbance in the higher cerebral centres of co-ordination. Since then most writers have come to the same conclusion by recognising that there are other symptoms besides the nystagmus, such as the nodding of the head and the tremor of the hands. One of Llewellyn's cases had a curious circular motion of the arms, and it is from these associated symptoms that some writers have discriminated between miners' nystagmus without neurosis and miners' nystagmus with neurosis. But a broad view of the facts as disclosed by these recent investigations forces one to the conclusion that the disease is located in the higher cerebral centres.

Ohm,[2] whose book on *Miners' Nystagmus* has just appeared, has contributed valuable observations on this point. By means of a binocular ophthalmoscope which he invented, he was able to watch the fundus of each eye of the patient at the same time. He found that in most cases of vertical nystagmus the one eye moved upwards, while the other eye moved downwards, and in horizontal nystagmus the eyes diverged and converged. Since the nystagmus is involuntary it cannot be due to a lesion of the cerebrum, and must be situated in the oculo-motor nucleus below the aqueduct of Sylvius. Ohm suggests exhaustion of the cells of the nucleus as the origin of the disease. He shows that the nuclei of the elevators of the right eye lie immediately in front of the depressors of the left eye with the same relationships on the other side of the middle line. Normally, the elevators of the two eyes act together; but, as his experiments have shown, the two groups on each side must act together—*i.e.*, the elevators of the one eye and the depressors of the other eye—in the great majority of cases of miners' nystagmus.

The question whether the disease can occur without nystagmus must be held as open. This is not so much because of the extreme rarity of the observed cases, as on account of the nature of the disease, and for the reason that the chief factor in the etiology is the absence of light, which can alone affect the brain through the eyes.

But, at anyrate, there must be a stage in the disease prior to the development of nystagmus. It is of course of the greatest importance that such early cases should be most carefully scrutinised. The symptoms, as have been stated above, are almost entirely subjective, and it is therefore difficult to accept these cases as coal miners' neurosis. But in the case which has been described above, the patient had no suspicion that his condition was associated with a coal mine, and he could not have had the slightest advantage in considering that he was suffering from such a condition. On the contrary, although very intelligent, it had not occurred to him to mention his association with work of this nature when he consulted me first. If it is proved, therefore, that a stage does occur prior to the development of nystagmus, we may hope that further progress, including the better illumination of coal mines, will ultimately abolish this disease from the collier.

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[1] W. B. Inglis Pollock, "Nystagmus and Theories regarding its Causation," *Trans. Med.-Chir. Soc. of Glasgow*, 1908-1909, vol. viii, p. 101.

[2] J. Ohm, *Das Augenzittern der Bergleute*. Leipzig: Wilhelm Engelmann 1912.

Conclusions.—1. The absence of light is the chief factor in the causation of miners' nystagmus. Coal gas, hydrocarbons from the lamps, and astigmatism are probably secondary agents.

2. The myopathic theory of the late Simeon Snell has now been abandoned.

3. Nystagmus is the most important, but not the only symptom in a complex neurosis.

4. Three cases have been published, and to these a fourth is added, of the disease occurring without nystagmus.

5. The opinion is advanced that these cases represent the stage prior to the development of nystagmus.

6. Evidence is brought forward in support of the view, published five years ago, that the lesion is situated in the cerebral centres; most probably the nucleus of the third and associated nerves.

X-RAYS IN MALIGNANT DISEASE.

By W. F. SOMERVILLE, M.D.,
Medical Electrician, Western Infirmary, Glasgow.

THE accompanying photographs afford a good example of the therapeutic value of *x*-rays in cases of inoperable malignant disease.

The patient, a woman of 71 years, was sent to me in September, 1912, by Dr. Andrew Gibson, of Baillieston. The history of the onset and progress of disease, as given by the patient, was somewhat vague, but it appears that about two and a half years ago she was struck on the right breast by a falling ladder. Shortly after this a swelling was noticed in the breast, and, in the course of some months, this swelling, after increasing in size, "broke" and discharged.

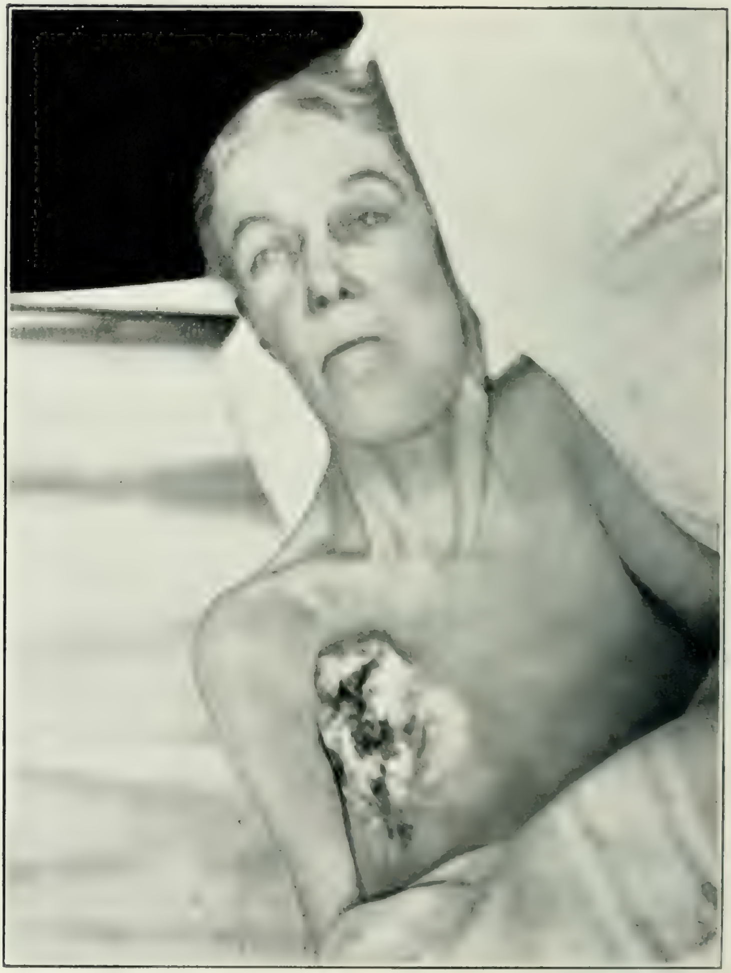
Various local applications failed to produce any improvment, and when I first saw the patient in September, 1912, I found a large, fungating, bleeding, ulcerating surface over what remained of the right breast. The first photograph (Fig. 1) shows the condition at that time. An examination of the tissue of the tumour by Dr. Haswell Wilson, Assistant Pathologist, Western Infirmary, Glasgow, proved the growth to be one of scirrhous carcinoma.

X-rays were applied once a week from September, 1912, till March, 1913. As a result, all discharge ceased and the ulcerating surface healed, while the tumour was reduced to a small solid mass. Pain was also entirely removed. The results are depicted in the photograph (Fig. 2).

When I last saw the patient, three months after treatment had been discontinued, the condition had, if anything, improved, as the tumour appeared to have still further diminished in size. The woman declared that, apart from the comfort derived from the absence of discharge, her general health was better, and that she was muscularly stronger.

The relief, both bodily and mental, to the woman may be well realised.

FIG. 1.



To illustrate Dr. W. F. Somerville's communication.

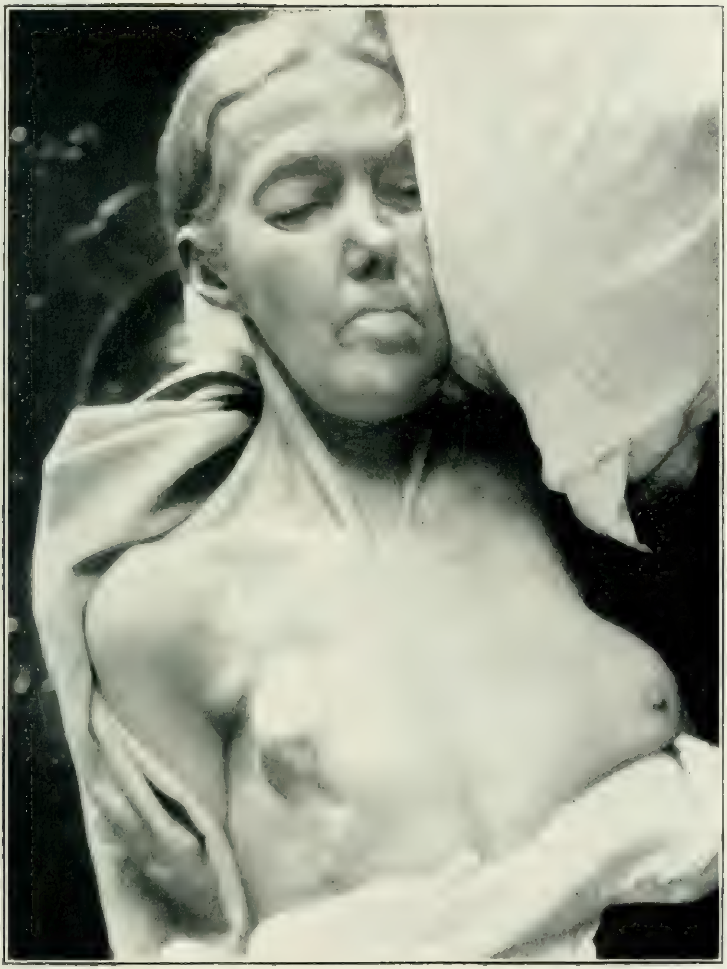


FIG. 2.

ON THE DIFFERENTIAL DIAGNOSIS OF MANIC-DEPRESSIVE INSANITY AND DEMENTIA PRECOX.[1]

By R. M. MARSHALL, M.D.,
Senior Assistant, Royal Asylum, Gartnavel, Glasgow.

THE terms manic-depressive insanity and dementia precox were used by Kraepelin to designate two disease entities, which he considered were between them responsible for most of the states of mental disorder usually gathered together under the title, the psychoses. The medical dictionaries which I have consulted do not attempt to give a formal definition of the psychoses. The term has been rather loosely used in psychiatry, and its connotation may be most easily explained by indicating what the psychoses are not. They are something more than states of mental disorder, and something less than disease entities; they lie between these. Excitement, depression, delirium, and stupor are states of mental disorder which may arise during the course of many diseases, general paralysis, hysteria, epilepsy, the cerebropathies, constitutional and infectious diseases; but acute mania, acute melancholia, anergic stupor, delirious mania, are psychoses. They differ from a state of mental disorder in so far as they are self-sufficient, and are not the expression of an underlying disease: moreover, they run a fairly definite course, ending either in recovery or in dementia. On the other hand, the individual psychosis has not a sufficient autonomy to allow us to regard it as a disease entity. The various categories of the psychoses not merely fade into each other, as may be gathered from the name given to one category, excited melancholia, but they tend to alternate with each other.

Many attempts have been made to classify the psychoses. These attempts were, for the most part, based on considerations drawn from their supposed etiology, their symptomatology, course, and termination: but the considerations were often hypothetical, and in most cases arbitrary. It is not a matter for wonder, therefore, that no scheme of classification has met with general acceptance, with the result that each observer has considered himself entitled to adopt his own scheme of classification, often using the current nosological terms with little regard to their accepted connotation. Further, there has been a tendency on the part of authors to seek to establish new categories of the psychoses. The result was that when any honest attempt was made to diagnose and form a prognosis of the cases of the psychoses which came under notice, the brain reeled. For example, an ordinary case of mental excitement might be considered as delirious mania, acute confusional insanity, hallucinatory insanity, amentia, or paranoia dissociativa, each category having a certain autonomy. Now, when we remember that the psychoses constitute about 75 per cent of the yearly admissions to our asylums, the unsatisfactory state of affairs and the consequent stagnation of thought will be realised.

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[1] Read at a meeting of the Medico-Chirurgical Society of Glasgow held on 20th December, 1912.

Kraepelin has done for the psychoses what Erb did for the amyotrophies, and it appears to me that I cannot do better than explain the work of the German alienist in the light of the work of the German neurologist with which you may be more conversant. Erb found the same state of affairs in the current views of the amyotrophies that we have seen existed in the psychoses. Contemporary neurologists were seeking to classify the amyotrophies in the light of facts arbitrarily taken from the etiology, symptomatology, course, and termination of the condition, and were busily engaged in differentiating numerous categories of the disease. Thus, the age incidence gave the infantile and juvenile types of the disease; the presence of the disease in more than one member of the family gave the familial type; the presence of atrophy or hypertrophy in the affected muscles gave the atrophic and the pseudo-hypertrophic forms; and the distribution of the affected muscles gave the facio-scapulo-humeral, the scapulo-humeral, the peroneal, or the Aran-Duchenne types. Erb showed that by studying the course of the amyotrophies, and by giving due consideration to transitional cases, it was possible to divide the amyotrophies into two disease entities—one characterised by the presence of an organic lesion of the spinal cord he called the myelopathies, the other not so characterised he called the dystrophies. He further showed that there were certain cardinal symptoms which allowed the clinician to distinguish the myelopathies from the dystrophies, "that conditions at the first glance identical might be apparent in the course of very different diseases, and the most diverse conditions could make their appearance in succession as indications of the same malady."

Now, this is just the service which Kraepelin has done for the psychoses. Indeed, the sentence with which I have closed my epitome of Erb's work is taken from Kraepelin's account of his own work. He emphasised the importance of dementia as a termination of the psychoses, and gathered those which ended in dementia into one disease category, dementia precox, and those which did not so end into another category, manic-depressive insanity.

Now, the fact of dementia predicated an organic change in the brain, so that dementia precox was an organic and manic-depressive insanity a functional disease of the brain. During the course of the two diseases states of excitement, of depression, of confusion, and of stupor might occur. Moreover, the states of mental disorder occurring in the course of dementia precox might appear, at the first glance, identical with the corresponding states of manic-depressive insanity; nevertheless it was in most instances possible to distinguish these corresponding states by certain cardinal symptoms of the two diseases.

The cardinal symptoms of dementia precox depend on an inco-ordination of the individual psychical processes, while those of manic-depressive insanity depend on a change in the mutability of the individual psychical processes. Normal mental life depends on the co-ordinated action of the emotional, intellectual, and volitional processes, and is characterised by a certain congruity of thought and conduct. If there is any inco-ordination of the activities of these individual mental processes, an incongruity of thought and conduct results. The nature of the incongruity in any given instance depends on the mental process mainly responsible for the inco-ordination. Accordingly the symptoms may be for a time confined to the emotional life, intellectual life, or volitional life.

Disturbance of emotion.—Irregularities in the emotional life manifest themselves in a disordered response to the ordinary emotional excitants. These excitants may be central or peripheral in origin, the latter being best suited for critical study. The emotional responses to the ordinary excitants may be absent or perverted. When absent, a general numbing of the emotions is displayed of which the patient is sometimes aware. He ceases to feel the pleasure or aversion which he formerly experienced, and displays an indifference towards his nearest relatives, and a carelessness of praise or blame. Perversion of the emotional reaction may take several forms. The excitant may produce the emotion which is the exact opposite of the one it should arouse, a patient so affected showing active hostility or studied offensiveness towards his relatives. The reaction may be paradoxical; thus a smile may never be far away from the lips of a man who tells you that he has ruined the world or is eternally damned. Again, an emotional excitant may arouse two conflicting emotions, and the conflict may be noted in the interplay of their expressions on the face of the patient. Along with these irregularities of the emotional reactions, transitory and evanescent emotional outbursts may occur. They vary in severity and duration from a burst of laughter or an access of weeping which cannot be accounted for, to emotional storms lasting from a few minutes to several hours, in which the patient may show the extremes of despair, anguish, fear, or anger. These are undoubtedly of central origin, and so long as the patient is left severely alone pass off harmlessly, as they are not directed against anyone in particular, but any attempt to divert these emotions may lead to serious assaults.

Intellectual.—The disturbance in the intellectual life is displayed by a disorganisation of thought. The term dissociation is often given to this vice in the process of association. In some instances the dissociation shows itself as a general failure of the ideational responses to the usual excitants of thought, resulting in a poverty of ideas. Patients so affected show no initiative: they may be readily engaged in conversation and got to work under supervision, but they show no spontaneity, and their conversation has no liveliness. Sometimes there is no succession in thought: the patient answers his interlocutor by using in the form of an affirmation the very words of the question put to him. Occasionally an apparent garrulity may mark the poverty of ideas, but the content of the talk shows little variation from day to day. The succession of thought may be distorted, showing itself in a grotesque incoherence. The stream of thought may be divided so that a patient while sustaining his part in a conversation may carry on another in an undertone. Patients who suffer from psychical hallucinations, or harbour insane ideas, may manifest the disorganisation of their thought only when speaking about them.

Volitional.—The faculty of the will as expressed in conduct is the flower of mental life. To allow of its normal activity the processes of thought and feeling must be properly elaborated and co-ordinated. Therefore, all the disturbances of thought and feeling which we have investigated will be reflected in the conduct of our patients. The numbing of thought and feeling renders conduct stolid and stereotyped. The failure of the succession of thought and the perversion of the emotions lead to anti-social conduct, to echo-speaking, and echo-acting. The presence of psychic hallucinations and insane ideas may lead to fantastic, affected, or capricious behaviour, to the performance of grotesque antics and grimaces, to the coining of new words with which to express the disordered products of their imagination, or to what has been termed negativism. This term has been used to specify the conduct of a patient who persistently shows an opposite response to excitants from his environment. This opposition may manifest itself as an aimless resistance to everything that interferes with the patient, or as a settled line of policy: the former may arise from many conditions, the latter is probably the result of insane ideas, and is very characteristic of the precocious dement. Negativism in the former sense is an important symptom of katatonia, but a condition very hard to distinguish from katatonic negativism is often met with in cases of manic-depression with confusion.

Let us now turn to the cardinal symptoms of manic-depressive insanity. As we have seen, they depend on modification of the mutability of the individual psychical processes. In the maniacal states their mutability is increased; in the depressive states, decreased. Moreover, it cannot be too strongly emphasised that however greatly the mutability of the emotional, intellectual, and volitional processes is modified, they are perfectly co-ordinated, and the mental life as a whole shows a normal congruity.

Excitement.—The increased mutability of the individual psychical processes renders the maniacal patient responsive to every passing impression, to every casual thought, to every emotional excitant. The response to emotional excitants is immediate and exaggerated, so that the patient may go through the gamut of the emotions while we speak to him. These emotional outbursts are definitely directed against those about him, and may lead to dangerous assaults, but they are fortunately easily diverted and displaced by other emotions. Underlying these changing emotions there is a constant emotion of self-appreciation, which is one of the primitive endowments of the ego, and this colours all the products of thought. The disturbance in thought is characterised by the flight of ideas. This term is applied to the gradual loss of the thread which usually joins together the ideas in our talk. The flow of thought is not directed to any definite goal, and, indeed, the individual ideas are not worked out. The volitional activity tends to be displaced by automatic freedom of action, which shows itself as a press of occupation. The patient is constantly employed, shows feverish industry and has numerous irons in the fire, and never finishes any task he takes in hand.

Depression.—The immutability of the individual psychical processes renders the patient irresponsive to the usual excitants of thought, feeling and action. The striking feature is impediment of will—a term used to denote the obvious difficulty the depressed patient has in carrying out the dictates of the will, when the symptom appears without complication. In its true form the patient has no fear of expressing himself in word or deed, and he makes an effort to comply with the demands made on his activity. A similar condition may appear in the process of thought, when it is spoken of as impediment of cognition. The ideas aroused in consciousness do not develop, and unless fixed by an effort of attention, or by the repetition of their excitants, tend to disappear from consciousness. The emotional excitants also suffer, and, if they actually appear in consciousness, do not develop: but the emotion of self-abasement, which, like the emotion of self-appreciation, is an endowment of the ego, is constantly present, and colours all the products of thought. The depressive state gradually fades into the state of depressive stupor in which the impediment of thought and volition is nearly absolute, the only voluntary activity of which the patient is capable being to defend himself from attack, *e.g.*, the prick of a pin, or a slap on the cheek.

If hallucinations and delusions complicate the excitement and depression we have states of confusion, the maniacal origin of which may be revealed by the presence of impediment of will and cognition or automatic freedom of action and the flight of ideas.

The respective courses and terminations of dementia precox and manic-depressive insanity add important considerations to our conceptions of the two diseases. The course of dementia precox is at present a matter of study. In our opinion, the disease runs a fairly acute course, terminating in a permanent dementia, which may to a certain extent be made good by a process of compensation. There may be remissions during the course of the disease, the patient enjoying fairly normal mental life. Second attacks, although rare, undoubtedly occur.

The course of manic-depressive insanity is characterised by recurrence, interchange, or intermingling of the essential features of the maniacal and the depressive states. The statement that manic-depressive insanity does not end in dementia has to be qualified. In our view, a state of mental weakness, amounting to general immaturity of thought and conduct, is sometimes seen in cases in which the disease came on in early life and ran a periodic course of marked severity.

We are now in a position to appreciate the difficulties that may be encountered in making a diagnosis between states of mental disorder, arising from dementia precox and manic-depressive insanity, and to apprize the value of the various symptoms in helping us to overcome them. Let us confine our attentions to the states of excitement arising from the two diseases. If we note in a state of mental excitement unequivocal evidence of intrapsychic ataxia, we may be confident that we are dealing with dementia precox. Any defect in the congruity of thought, manifested by the emotional, intellectual, or volitional perversions which we have studied, is pathognomonic of a dementing process. On the other hand, the presence, in an unequivocal state, of automatic freedom of action and the flight of ideas, supported by the history of several previous attacks completely recovered from, are equally sure signs of the excitement being maniacal. But as we have shown in a previous paper, fairly typical maniacal states may usher in dementia precox, and so long as they last, obscure the evidence of psychic ataxia. We can, therefore, form only a presumptive diagnosis of manic-depressive insanity when there is no history of previous attacks. Again, the fact of the tendency of dementia precox to remit more or less completely does not allow us to put too much stress on a single previous attack. Further, the aimless resistance which we have seen is characteristic of states of katatonic excitement may be, in our opinion, closely simulated by certain mixed states of manic-depressive insanity, in which we have automatic freedom of action co-existing with impediment of cognition. Such patients often offer a blind resistance to every stimulus from their environment, hard to distinguish from katatonic negativism. In many cases of excitement, in which the maniacal symptoms are equivocal, it is often impossible to make a diagnosis, and we must wait until either the state subsides or symptoms of psychic ataxia appear before we can come to a diagnosis. Although in many cases the diagnosis must rest on the result of an extended observation of the courses of the disease, there are two clinical methods of extreme importance which should be applied in each case, from the commencement, if possible. The first of these is the method of psycho-analysis of Freud; by this means the early dissociation in thought, premonitory of ultimate dementia, may be detected; the second is that which depends on a due appreciation of the somatic changes peculiar to dementia precox, perhaps the most important of these changes being the anomalies in the sensory reflexes of the eye, which suggest, though somewhat remotely, a similarity, in some respects definite, to the changes in general paralysis.

Obituary.

JOHN STEWART, M.B., C.M.GLASG.,
BEITH.

WE regret to have to announce the death, which occurred with startling suddenness on 16th July, of Dr. John Stewart, of Beith. Dr. Stewart received his medical education at the University of Glasgow, and graduated M.B., C.M., in 1893. Settling in Beith, he engaged in private practice, and also held a number of public appointments, being Parochial Medical Officer, Medical Officer to the Post Office, and Certifying Factory Surgeon. While latterly his health was not perhaps of the best, he had not relinquished any of his work, and he was actively engaged in seeing patients on the day of his death.

DONALD CAMPBELL, M.D. GLASG., J.P.,
EDZELL.

THERE passed away at his residence, Cardowan, Edzell, on 8th ultimo, a Glasgow graduate of old standing in the person of Dr. Donald Campbell.

Deceased studied medicine in the University, and graduated M.B. in 1867, and M.D. in 1874. He was for long in practice in Edzell, and held the appointments of Medical Officer and Public Vaccinator to the parishes of Edzell and Lethnot. He was also Medical Officer to the Post Office, and was a Justice of the Peace.

CURRENT TOPICS.

APPOINTMENTS.—The following appointments have recently been made:—

Andrew F. Galloway, M.D., C.M.Glasg. (M.B., 1895), to be Surgeon to the City of London and East London Dispensary.

Hugh Morton, M.D.Glasg. (M.B., 1907), to be Lecturer in Medicine, Western Medical School, *vice* G. A. Allan, resigned.

J. Young, M.B., Ch.B.Glasg. (1906), to be Medical Officer of the Workhouse and Schools of the Ormskirk Union.

TUBERCULOSIS OFFICER FOR EDINBURGH: APPOINTMENT OF GLASGOW GRADUATE.—Dr. John Guy, Tuberculosis Officer for the County of Gloucester, has been appointed Assistant Medical Officer of Health in Edinburgh, acting as Tuberculosis Officer. Dr. Guy graduated M.B., C.M.Glasg., in 1894. In 1899 he obtained the D.P.H.Cambridge, and in 1900 he graduated M.D. In 1911 he became a fellow of the Royal Faculty of Physicians and Surgeons. He was for some years Medical Superintendent of the Bridge of Weir Sanatorium, and was only recently appointed Tuberculosis Officer for the County of Gloucester. His present appointment carries with it the salary of £600 per annum.

THE NEW POET LAUREATE.—The medical profession cannot fail to have been interested in the recent appointment to the office of Poet Laureate. We believe that when the news of the appointment appeared about six weeks ago there were few outside a certain circle who were alive to the fact that the honour had been conferred on a member of our profession, Dr. Robert Bridges.

Born in 1844, Bridges was educated at Eton and Oxford. He studied medicine at St. Bartholomew's, and graduated as Bachelor of Medicine of Oxford in 1874. Twenty-six years later he was elected a Fellow of the Royal College of Physicians of London. In the course of a brief career in medical practice he became Casualty Physician at St. Bartholomew's, and an Assistant Physician to the Great Ormond Street Children's Hospital. In 1882 he retired from practice, and since that year has devoted himself to poetry. While the association between medicine and poetry is no new thing—witness Goldsmith, Keats, and Hake—we are not aware that any of Dr. Bridges' official predecessors have been medical men.

The new Laureate's works have been described as being "severely classical," and it is quite evident from the notices which have appeared in the press that he has not by any means a wide circle of readers. This may be explained, however, by the fact that. so far has he been from courting popularity, it is only very recently that a collected edition of his works has appeared.

The profession cannot complain of any lack of Royal recognition; and, although Dr. Bridges' appointment is not to be considered as a tribute to medicine as such, we can hardly overlook the fact that the honour has come to one who was, in the period of his youth and early manhood, a practising physician. We offer him our cordial congratulations on his appointment.

ANNUAL MEETING OF BRITISH MEDICAL ASSOCIATION.—The annual meeting of the British Medical Association was this year held at Brighton, and although the energies of many of the members of the Association must have been fully taken up for the International Medical Congress which met in London in the following week, yet, to judge from the reports which have so far appeared in the columns of the *British Medical Journal*, there was no lack of interesting material brought forward in the various sections of the Association.

The President, Dr. W. Ainslie Hollis, took as the subject of his address, "A Medical History of Brighton and the Neighbourhood." The address, which was full of interesting matter, was evidently the result of considerable research on the part of Dr. Hollis. It certainly adds a stone to the edifice which its author had kept in view, viz., a topographical history of English medicine.

The address in Medicine was delivered by Professor G. R. Murray (Manchester), and dealt with "Some Aspects of Internal Secretion in Disease." A wide subject, Dr. Murray expounded it with great skill, and there was in it that suggestiveness which one looks for in the circumstances.

Sir Berkeley Moynihan delivered the address in Surgery, taking as his subject the "Gifts of Surgery to Medicine." Needless to say, the speaker delivered himself in a masterly way of a paper which will be read with interest, as bringing together in a concise form a great deal of what is known at the present day concerning abdominal diseases. He referred to the debts which we owe to Morton for anæsthesia, and to Lister for antisepsis, and he paid a generous tribute to the work of Crile as regards shock.

In addition to the work of the sections there were numerous entertainments for the members and their friends, and this year's meeting will be associated with many pleasant memories for those who took part in it.

THE ORIGIN OF CRIME.—One of the discussions in the section of Medical Sociology, at the Brighton meeting of the British Medical Association, was on "Crime and Punishment." Those responsible for its selection must have been aware of the interest which has of recent years been directed to this subject, and the views expressed by different speakers gave proof of the widespread attention which it has excited. Perhaps one of the most interesting contributions to the discussion was that of Dr. C. A. Mercier, the well-known author of *Criminal Responsibility*. In the course of his remarks Dr. Mercier proposed the thesis that crime is a consequence of the social state. "A person living in solitude could not commit a crime." Crime is that which is destructive or detrimental to the social state; but this statement does not conflict with Dr. Mercier's former definition of crime as "that which is punishable by law," because, as he proceeds to show, the law is founded on the principle of social preservation. It may be asked, "Why do people live together in a society?" The answer to this question is that there is a natural, inborn, instinctive desire in everyone for the society of his fellows, and an aversion to solitude. Once a social state has been formed, its enormous and overwhelming advantages will secure its survival and at the same time that of institutions favourable to such a state.

Dr. Mercier then asks, how it is that, if crime consists in acts that tend to the destruction of society, and if man is not adapted to any mode of life other than the social life, he should yet have criminal propensities. This brings us to the consideration of the origin of crime. How is it that, while other animals leading a social life, animals such as "the wasp, the bee, the ant, the termite are compelled to surrender the most primitive, the most fundamental, the most dominant and imperious of all instinctive desires, for the maintenance of the society to which they belong," man is often incapable of the trivial sacrifice of remaining free from crime? "How is it that his nature, his instincts, his desires have not attained the same perfect adaptation to his social state that has been attained for theirs by the petty insects that he is apt to despise?" Dr. Mercier answers this question thus: "Man's socialisation is as yet imperfect, because, by reason of the comparative recentness of the attainment of the social state, the instincts and desires that served him in the solitary life have not yet been completely subordinated to the social desires or brought into harmony with them. The solitary instincts—that is to say, the selfish instincts and desires—are still insufficiently subdued; and when they conflict, as they must sometimes conflict, with the social instincts, the victory is sometimes gained by selfishness, and then the result is crime. The root of all crime is the determination to obtain gratification for oneself regardless of the cost to others."

Having so answered the question as to the origin of crime, Dr. Mercier then passes to punishment, as the result of crime. "By rendering the result of crime detrimental and unpleasant to the criminal, we can enlist his selfishness in the interests of morality, and induce him to do that for his own sake which he would not do for the sake of his fellows." Arising out of which it follows that prison life should not be made pleasanter than the life that man can lead honestly at large. If you treat the criminal as some soft-hearted sentimentalists would like done, you must not wonder at increase in the statistics of crime.

These quotations will show how Dr. Mercier sustained his thesis. It is well worth the while of every one interested in the subject to read the paper in full.

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE.—The International Congress of Medicine, to which we had been looking forward for so many months, is now a thing of the past. Held in London in the beginning of last month, it excited a great deal of interest among the public. The Congress was formally opened by H.R.H. Prince Arthur of Connaught, and from the opening to the close its proceedings were closely followed and duly chronicled by the daily press.

The work of the Congress was carried on in twenty-three sections and three subsections, and, in addition, there were no fewer than fourteen meetings in which sections discussed various problems in joint session.

In the course of his presidential address, Sir Thomas Barlow referred to the great men who had been present at the Congress in London in 1881. In contrasting then with now, he pointed out that the Congress of 1881 emphasised the fact that the times of superstition, of empiricism, and of transcendental speculation had vanished. Accurate and detailed observation were supplemented and redirected into more fruitful channels by the new development of experimental methods. The great men of 1881 were like mountain peaks towering above the plain of ordinary medical humanity. Nowadays, "thanks to the unremitting labours of workers in multitudinous paths, we have attained a glorious heritage —not of high mountain peaks and deep valleys—but a lofty and magnificent table-land of well ordered and correlated knowledge." This has been due to the development and application of bacteriology, to the advances made in parasitology, to chemical pathology, and to x-rays. In surgery, viscera have been attacked by "the reasoned and calculated audacity of our brethren." Medicine has co-operated with economics, social legislation, and philanthropy to form a new department, that of public health. In conclusion, he ventured to "affirm that the output of work of the Congress week, in its twenty-three goodly volumes, will astonish civilised countries by its amount and its solid worth."

Professor Chauffard (Paris) delivered the address on Medicine, taking for his subject "Medical prognosis: its methods, its evolution, its limitations." After tracing the methods of prognosis, and its gradual evolution, progressing along with the developments in diagnosis and treatment, he described prognosis as the "synthesis of medical criteria." After all other factors have been taken into account, there remain the possibilities of the organism that has fallen a prey to sickness. Is it able partially or completely to overpower disease? This is the great problem which commands and includes all others, and Professor Chauffard admits that we cannot hope always to solve it.

The address in Surgery, by Professor Harvey Cushing (Harvard), dealt with "Realinements in greater medicine." Professor Cushing dwelt on the spirit of investigation, fruitful in discoveries which have exercised an effect on Surgery. The tendency to disparage the so-called accurate or "scientific" attitude in medicine, and make much of the "practical" man who is superior to the microscope and other laboratory accessories, is rapidly passing. But not only have the scientific discoveries in medicine altered surgery: surgery, by making possible a reactionless wound-healing, has rendered possible observations which, in the pre-antiseptic era, could not have been carried out. Towards the conclusion of the address, Professor Cushing expressed the opinion that in the future "visiting" surgeons to hospitals will give way to "directors of hospital units" who "can uninterruptedly devote themselves to their work without entering into competition for practice beyond the walls of the institution."

All three addresses of themselves, and quite apart from the transactions of the sections of the Congress, are stimulating and give occasion for considerable thought as to the future—possibly the near future—of medical work.

R.A.M.C. (T.F.), GLASGOW UNITS: ANNUAL CAMP.—This year the Field Units of the Glasgow R.A.M.C. (T.F.) went under canvas in Ayrshire. The 3rd and 4th Scottish General Hospitals encamped respectively at Cosham (Portsmouth) and Shorncliffe. The period of the camp training was from 18th July till 1st August.

The field units, comprising the Lowland Mounted Brigade Field Ambulance (Lieut.-Colonel H. W. Thomson) and the 1st and 2nd Lowland Field Ambulances (Lieut.-Colonel G. H. Edington and Lieut.-Colonel A. D. Moffat, T.D.), paraded in St. Enoch Square at 5·45 A.M. on 18th July. The parade, which was under the command of Lieut.-Colonel Moffat, was then marched into St. Enoch Station, and entrained at 6·15 A.M. for Irvine. On arrival at Irvine about 7 o'clock detraining was rapidly accomplished and, headed by the pipe bands of the 1st and 2nd Field Ambulances, the units marched *via* the Irvine-Troon road to Meadowhead, where in a field adjoining the cemetery the camp had been laid out by the advance party. In the course of a very short time after marching in, squads had been told off to their tents, and the various members of the units had begun to settle down to camp life.

The transport section, including horses, ambulance wagons, G.S. carts and other vehicles, proceeded to Irvine by a separate train, and reached camp a few hours later.

The field in which the camp was situated was at the junction of the Drybridge-Dundonald and the main Irvine-Troon roads. It was separated from the Gailes camp by the Irvine-Troon road. Just across the road from the R.A.M.C. were the lines of the Royal Engineers; the Army Service Corps camp was situated a little to the S.W., nearer the railway; and further south lay the H.L.I. Brigade under the command of Colonel P. W. Hendry, V.D. South of this again was the camp of the Royal Flying Corps, conspicuous by its lofty hangars.

The R.A.M.C. camp faced south, and on the north its rear was separated from the Drybridge road by a belt of trees. In front of the lines stretched a large expanse of field, making an excellent exercise ground; and on the east side of this were pitched the horse lines. The camp was materially augmented on 20th July by the arrival from Edinburgh of the 3rd Lowland Field Ambulance (Lieut.-Colonel A. A. Ross).

Although surrounded, as it were, by the camps of infantry and other units, the R.A.M.C. did not undertake the treatment of the sick of any of the regiments, with the exception of those belonging to the Royal Engineers; the training which was laid down for it was the formation and movements of field ambulances. These exercises were not confined to the exercise ground, but the corps took part in the field operations and tactical exercises of the other troops, and in this way there was much route-marching, pitching of dressing-stations, and carrying-in of "wounded" during and after engagements. The presence in the near neighbourhood of other arms of the service added greatly to the interest of this year's camp. Not only were our ears constantly assailed by the music of the regimental bands, but we were witnesses of many route-marches, and the spirit of emulation was kindled and, need we add, easily kept aflame. And then, whenever movements of any magnitude were undertaken the medical units participated in the work, and opportunity was gained of acting in concert with the combatant troops. In this way one field ambulance would parade, say, at 6 A.M. and march off to do duty with the H.L.I. Brigade as the attacking force, while another would parade an hour or two later to be attached to the S.R. Brigade who were acting as defenders, and a third would fall in at a different hour and proceed to get in touch with yet another fighting force. All these movements meant expenditure of physical energy, but very, very few were the cases of sickness or of "sore feet," and the fitness of the members of the units was well tested.

The messing arrangements of the camp were excellent. In rear of the "lines" of tents large marquees were erected for feeding-tents. These were fitted with benches and tables, knocked up by a local joiner. In this way not only was the comfort of the men greatly increased, but the living-tents were more easily kept in order, and there was an absence of that litter of crusts, egg-shells, &c., which used to have such an attraction for the eagle eye of the orderly-officer of the day. The tent-orderlies repaired at stated hours to the cook-house, or the quartermaster's store, and drew the rations and various extras. They conveyed the food to the marquee and set it on the particular table allotted to their mess. Then, as the bugle went, the various messes, each under the command of its senior member, were marched into the marquee and took their places at table. The senior member of a mess was responsible for the tidiness and order of his messmates, and in this way there was, after the conclusion of the meal, not very much cleaning-up required of the marquee staff.

In rear of the marquees were the quartermasters' stores, the cook-houses, and ablution-benches, and the water-supply pipes. The latrines were situated at the east border of the camp, and the system adopted was that of pails. The excreta after being deposited in the pails were covered with earth, from a bucket and scoop kept in the latrine, and the pails were emptied daily by a contractor. Small pits were cut for urinals, the sandy soil favouring this method of disposal of the urine.

The Camp Commandant was Lieut-Colonel A. D. Moffat, T.D., the senior Lieut-Colonel of the Units, and the scheme of training drawn out by him was not only practical, but possessed of variety sufficient to banish monotony. The camp was frequently visited by Colonel D. J. Mackintosh, M.V.O., Assistant Director of Medical Services. Colonel Woodhouse, Deputy Director of Medical Services in the Scottish Command, also made a minute inspection of the units when engaged in field operations. Inspections were also held by General Sir Bruce Hamilton, K.C.B., Commander-in-Chief of Scotland; General Wintour, C.B., Brigadier-in-Charge of Administration, and General Spens, C.B., Commanding the Lowland Division.

The weather throughout, with the exception of one wet day, was ideal, and the appearance of the members of the corps on their return to Glasgow was such as to convince even the most rabid opponents of militarism of the benefits, physical and mental, to be derived from a course of military training.

AEROPLANES AND MEDICAL SERVICES IN THE FIELD.—During the recent Territorial camp-training in Ayrshire widespread interest was excited by the presence of aeroplanes in the camp, and the part they took in manœuvres. Just about the same time the members of the section of Navy, Army, and Ambulance at the Brighton meeting of the British Medical Association had the opportunity of hearing a paper[1] by Lieut.-Colonel Donegan, R.A.M.C., on the relation and utility of aeroplanes in connexion with medical services in the field. Colonel Donegan's ambulance experiments were conducted in the hydro-biplane, the newest invention of Colonel Cody (whose tragic death, from a mishap to his aeroplane, occurred the other day). In this machine the operating table with all surgical contents, three medical officers, and, if necessary, two wounded men can be carried with the greatest of ease. Colonel Donegan in his paper pointed out how, in the event of a full regiment of cavalry having a serious casualty list when perhaps thirty or forty miles away from the main army, additional medical assistance can by this means be provided. The question of the use of aeroplanes for this purpose would seem to be very up to date. The discussion of the subject may meanwhile safely be left in the hands of our brethren of the R.A.M.C., for whose practical commonsense we have the highest regard.

THE SERVICES.—*Royal Army Medical Corps:* At the recent competition for commissions in the Royal Army Medical Corps, twenty-one candidates entered. As mentioned in our last issue (p. 121) there were only five vacancies. The fifth place was gained by H. C. D. Rankin, M.B., Ch.B.Glasg. Mr. Rankin graduated in 1911, and afterwards held the post of House Surgeon in the Royal Infirmary. When the Scottish Red Cross Hospital was sent out last year to the Balkans, he was appointed one of the Medical Officers, and on his return from the war he acted for a time as House Surgeon in the Royal Hospital for Sick Children. In the recent examination Mr. Rankin gained 550 marks, and we may mention, as showing the keenness of the competition, that the two candidates who were bracketed for first place were only 12 marks ahead of him.

Indian Medical Service: There were twelve vacancies, for which thirty-three candidates competed. The fourth place was secured by Mr. J. Findlay, M.A., M.B., Ch.B.Glasg. (1911), with a total of 3,167 marks out of a possible 5,100. Mr. Findlay, who was 350 marks below the candidate at the head of the list, had served as Surgeon in the S.S. "Heuzada," and had previously been House Surgeon in the Royal Infirmary.

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[1] See *British Medical Journal*, 9th August, 1913, p. 304.

COLOUR VISION TESTS AT SEA.—The Liverpool *Journal of Commerce* stated recently that the Board of Trade have settled the controversy regarding colour vision tests in the mercantile marine. The Board have issued instructions that in future a candidate who already holds certificates of competency of any grade who is presenting himself for examination for a higher certificate shall not be required to undergo any colour vision tests. Leading shipowners, says the *Journal*, express the warmest appreciation of the Board of Trade's action in making this change.

JEAN JACQUES ROUSSEAU AND MÉNIÈRE'S DISEASE.—The recent meeting in Glasgow of the Scottish Otological and Laryngological Society reminds us that, more than one hundred years before Ménière published his classic paper, apoplectiform deafness, as he himself experienced it, was described by a layman, J. J. Rousseau; whose fairly accurate account is all the more to be marvelled at when we recollect that, despite his extensive medical reading, dissections on the cadaver, and association with numerous doctors as friend and patient, he was, by virtue of his hypochondria and artistic temperament, quite unfitted to write of either himself or his illnesses without embroidering. We are not in the meantime concerned with the mental aspects of Rousseau's ailments, nor do we intend to take cognisance of his bladder and other complaints, but shall strictly limit ourselves to those parts of *Les Confessions* which throw light on the particular physical malady under discussion.

In 1732, when aged 21 years, Jean Jacques commenced to suffer from symptoms of uncompensated valvular disease—mitral stenosis, at least so we surmise, and remained more or less an invalid for the succeeding four years. He then removed to the country (Charmettes) in order to take a course of milk, and it was while there that he had "an experience, as singular in itself as in its consequences, which will cease only with my life":—

1736.—One morning when not more ill than usual, on setting up a small table, I felt throughout my whole body a sudden and almost inconceivable revolution. I cannot compare it better than to a sort of tempest, which sprang up in my blood and spread directly to all my members. My arteries started off beating with such a tremendous force that not only was I conscious of their throbbing but I heard it, especially in the carotids. A loud noise in my ears, made up of three, or rather four, different sounds, was added to the above, viz., a buzzing low and indistinct, a louder

> murmur like that of running water, a very sharp whistling, and the pulsation of which I have just spoken, and of which I could easily count the beats without feeling my pulse or touching my body with my hands. This noise inside my head was so loud that it deprived me of my former sharpness, and rendered me not altogether deaf, but hard of hearing, as I am since that time.
>
> You can imagine my surprise and terror. I thought I was dying. I went to bed; the doctor was called. I tremblingly explained to him my condition, thinking it without remedy. I believe he was of a like opinion, but he practised his profession. He plied me with long arguments, of which I understood nothing; then, in consequence of his sublime theory, he commenced *in anima villi* the experimental cure that he was pleased to try. It was so painful, so disgusting, and effected so little, that I soon grew tired of it; and, at the end of a few weeks, seeing that I was neither better nor worse, I left my bed and resumed my ordinary mode of life with my arterial pulsations and my buzzings, which since that time—that is to say, thirty years ago—have never quitted me a minute.

That in the above record there is no mention of vertigo, without which Ménière's syndrome would not be satisfied, we must explain by the supposition that the disturbance of equilibrium was so profound as to render its description by "giddiness" altogether inadequate, and so overpowering as not even to suggest to the mind of Jean Jacques that he was experiencing but an aggravated vertigo. It was thus no doubt that he sought expression of his static derangement in such phrases as "almost inconceivable revolution," and "a sort of tempest, which sprang up in my blood and spread at once to all my members." However, when presumably symptoms had somewhat moderated, there is mention of giddiness. Thus, in the following spring, Rousseau declares—

> When I stooped, my throbbings were redoubled, and the blood mounted to my head with so much force that I was very quickly compelled to stand up again.

And later on, under date 1737-1741, there occurs—

> I could not stoop without suffering from giddiness.

And though there is nothing said about vomiting, we are probably justified in connoting—"I thought I was dying" by sickness and faintness. Finally, the suddenness and severity of the onset, and the permanence of the tinnitus and deafness, make impossible any other diagnosis than acute serous or hæmorrhagic exudation into the labyrinth. At the same time it must be confessed that some of the symptoms, more especially the abrupt development of throbbing in the carotids and the persistence of a consciousness of these arterial pulsations, raise the suspicion that there may have been, coincident with the Ménière's disease, a rupture of one of the aortic cusps.

Syphilis as the cause of this labyrinthine disturbance may, we think, be dismissed, for Jean Jacques expressly states that he never suffered from venereal disease of any kind, and we have no reason to call his veracity in question. The rheumatic poison may have been the exciting agent; or there was hæmorrhage into the labyrinth consequent on emboli lodging in the internal auditory arteries, and the occurrence of Ménière's symptoms at the moment of engaging in the exertion of setting up a table supports such a view. The internal auditory artery, a branch of the basilar, vascularises the membranous labyrinth, and does not appear to anastomose with the stylo-mastoid artery nor with any of the other vessels supplying the bony walls of the labyrinth, therefore it must be regarded as an end-artery providing the conditions requisite to hæmorrhagic infarction.

That Rousseau was a rheumatic subject is proved by his declaration—

> In my youth I have often suffered from inflammatory maladies of the lungs, pleurisies, and especially quinsies, to which I was very subject, and which have all made me see death so near at hand as to familiarise me with his visage.

In France the term "esquinancie," as in Britain that of "quinsy," is very loosely employed by the people. Moreover, quinsy is pre-eminently a disease of adult life, hence in all probability we may safely infer that this frequently recurring throat affection was follicular tonsillitis.

The meagre data at our command, which after all are literary rather than scientific, do not warrant dogmatism. In view of the fact that Rousseau lived to the ripe age of 66, it is impossible to assert with any confidence that when 21 he suffered from failure of compensation, consequent on valvular disease of the heart; yet we would venture to suggest that such was probably the case. And, while the vehemence and the graphic nature of his complaints do not prove that his pains were physical, there is nevertheless, despite their obvious exaggeration, a quality about these outpourings, which carries conviction to the medical mind that his sufferings were not wholly imaginary. The Montpellier doctors' diagnosis of hypochondria does not suffice. The unmistakably cardiac symptoms that Rousseau describes, conjoined with the spitting of blood, must in the absence of malingering and mendacity be ascribed to organic disease; the former alone might be attributed to a cardiac neurosis or to an irregular form of exophthalmic goitre, but their association with hæmoptysis shows that we are dealing with more than functional derangement. It is apparent that for some years the patient himself, and his friends also, regarded the malady as consumption, an opinion we cannot endorse. It seems to us that the probabilities are decidedly in favour of mitral stenosis, which for some unaccountable reason ceased to be progressive; perhaps, accompanied later on by aortic regurgitation of sudden development and mild degree; and we would adduce the subjoined excerpts from *Les Confessions* in support of this conjecture.

> *1732.*—For some time past my health had been perceptibly declining. I do not know how it came about that I, with a goodly shaped chest and guiltless of excesses of any kind, was yet visibly fading away. I have a tolerable breadth of shoulders, the chest roomy, therefore my lungs ought to work comfortably; nevertheless I was short of breath, asthmatic, suffered from palpitations, and spat blood; a slow fever supervened, from which I have never since been altogether free.

Then came an exacerbation of his illness, necessitating confinement to bed, after which he remarks—

> Though recovered from the severity of my sickness, I had not regained my vigour. My chest was not right; a remnant of fever persisted, and kept me in a state of langour.
>
> *1736.*—However, the air of the country did not give me back my former health. I was pining away; I became worse. I could not bear the milk; it had to be abandoned. It was then the custom to regard water as a panacea; I put myself on this elixir, and with so little discretion that it all but relieved me not only of my misfortunes, but of my life. . . In less than two months I had totally destroyed my stomach, which till then had worked satisfactorily.

Sometime subsequent to the attack of Ménière's disease he writes—

> Though worried by this noise, I did not suffer from it: it was accompanied by no other habitual disability than that of insomnia at nights, and at all times by a shortness of breath, which did not amount to asthma, and which only made itself felt when I attempted to run or to engage in work a trifle hard. . . . It grieved me much not to be able to manage the garden myself; but when I had

turned over six spadefuls I was out of breath, the sweat was pouring off me; I could do no more.

1737-1741.—Nevertheless I was not recovering my health: on the contrary I was visibly wasting away; I was pale as death and thin as a skeleton; my arterial pulsations were terrible; my palpitations more frequent; I was constantly breathless, and eventually my weakness became such that I could scarcely move: I could not hurry without suffocating; I could not stoop without suffering from giddiness; I could not raise the lightest weight.

By dint of searching, reflecting, and comparing, I came to imagine that the root of my trouble was a polypus in the heart; and Salomon [M. le docteur] seemed struck by this idea. . . . I strained all my mental faculties to discover how one could be cured of a cardiac polypus, determined to attempt the miraculous. Anet was once told that M. Fizes, of Montpellier, had successfully treated such a case. Mamma remembered this and spoke to me about it. Nothing more was required to inspire me with the desire to consult M. Fizes. The hope of being made well gave me courage and strength to undertake this journey.

The visit to Montpellier benefited Rousseau considerably: though he declares that "my doctors there who had understood nothing of my complaint, regarded me as a hypochondriac, and treated me accordingly with their china-root, their waters, and their whey." There is nothing definite said about thoracic disease later than the date of 1742—"In consequence of a neglected cold I contracted inflammation of the lungs from which I almost died;" and not improbably this was but another manifestation of failing compensation.

If it be admitted that "polypus of the heart" was in the eighteenth century as familiar a designation of valvular vegetations as it was of cardiac thrombus, then must we concede that Rousseau made a not inaccurate diagnosis of his own case. And, though we do not for one moment imagine that this flouting of the advice implied in the adage prevented him from having a fool for his patient, we nevertheless believe that he was thereby saved from the much greater calamity of having a dolt for his doctor.

COFFIN-SHAPED TABLETS OF DANGEROUS DRUGS.—We quote the following from the daily press:—"Several recently reported cases of death caused by swallowing poison in mistake for medicine show the necessity for taking great precaution in the storage of dangerous poison. Since the notorious case of Mr. Walker, the Georgian banker, who died as a result of mistaking corrosive sublimate, otherwise known as bichloride of mercury, for some ordinary drug, American chemists have been vying with each other to devise some expedient to prevent poisoning through mistakes of this kind, which are sufficiently numerous to be disquieting. One maker, after a careful examination of various ideas that came to mind, has decided upon a coffin-shaped tablet, which certainly could not be mistaken for anything at present on the market. The deadly tablet can be made even more suggestive by stamping it on one side with the emblem of the skull and cross-bones, and on the other with the word 'poison.'"

This offers a marked contrast to a complaint recently made by a writer in one of our evening newspapers. This gentleman had occasion to go into a telephone call office in the north-western part of the city. It was a druggist's shop, and on asking at the busy counter for the 'phone, he was directed to go to a little room behind. While waiting for his connection after ringing up the Exchange, he was amazed to find that the instrument was flanked on both sides with open shelves of labelled bottles containing a great variety of poisons, many of them of the most notoriously virulent character. He adds that he might have possessed himself of half the poisons in the pharmacopœia and gone away unsuspected. What, he asks, avails laws regarding the sale of poisons and the provision of locked poison closets if a casual visitor from the street may so easily get all the poison he may want by going into a telephone call office?

"THE BRITISH JOURNAL OF SURGERY."—Some time ago Messrs. John Wright & Sons, of Bristol, announced the publication of a periodical devoted exclusively to surgery. A large editorial committee, with Sir Berkeley Moynihan as chairman, and Mr. Hey Groves as editorial secretary, and representative of the principal medical schools of the country, was formed. Invitations were issued to leading surgeons to become collaborators, and a hearty response was made.

The new periodical is issued quarterly, and the first number has just come to hand. A spirited introduction has been written by the President of the Royal College of Surgeons (Sir Rickman J. Godlee), and as a frontispiece there is a portrait of the late Lord Lister, accompanying which is a short editorial appreciation of Lister and his work. Among the original papers is one by Dr. David Newman, on symptomless renal hæmaturia; by Mr. D'Arcy Power, on gall-stones; by Mr. G. E. Gask, on autoplastic graft of fibula into humerus after resection for chondrosarcoma. There are descriptions of visits to surgical clinics at home and abroad; and in this issue the clinics described are those of Sir William Macewen and Professor Tuffier. Under the heading "Instructive Mistakes" are notes of several cases. These are unsigned. There are also notes on rare or obscure cases, on new instruments and appliances, and reviews and notices of books.

The *Journal* is printed on art paper. This is not pleasant for reading in artificial light; but it has the advantage of obviating the necessity of inserting plates for the illustrations.

The appearance of the publication is in keeping with its important aim, and we trust that it will receive the support which its projectors look for, and which it certainly deserves.

LITERARY INTELLIGENCE.—An important new work is about to be published, entitled *Researches on Rheumatism*, by Dr. F. J. Poynton and Dr. Alexander Paine. From the preface we cull the following extract:—"We have collected in this volume the chief papers bearing upon a research on the subject of rheumatism which has extended over a period of fifteen years. In so doing we are well aware that few have the time to spend over reading the details of such investigations, but should the essentials of this research be eventually established, we feel that this book will stand as a landmark in the history of rheumatism in this country. Some of these papers were written before we demonstrated what we believe to be the exciting cause of the disease; others elucidate the nature and action of that cause; others, again, extending the main thesis, deal with allied conditions. At the conclusion of the volume the bearing of these investigations upon clinical medicine and public health is considered in a special article." The work, which is to contain 106 black and white plates and a frontispiece in colour, will be published by Messrs. J. & A. Churchill.

The same firm has just issued the eleventh edition of Swayne's *Obstetric Aphorisms*, which is now edited by Dr. W. C. Swayne, Professor of Obstetrics in the University of Bristol; and has nearly ready the seventh edition of *The Microtomist's Vade-Mecum*, by Mr. A. B. Lee; the sixth edition of the late Professor Campbell Brown's *Practical Chemistry*, edited by Dr. Bengough; and the third edition of *A Text-Book of Physics*, edited by A. Wilmer Duff.

Messrs. Sampson Low, Marston & Co. announce a new edition, to be ready in a few days, of the late Miss Honnor Morten's *Sketches of Hospital Life.*

An important work on *Arterial Disease and Angina Pectoris*, by Sir Clifford Allbutt, M.D., F.R.S., is announced for publication in the autumn by Messrs. Macmillan & Co.

ROYAL ACADEMY OF MEDICINE OF TURIN: THIRTEENTH "RIBERI" PRIZE OF 20,000 FRANCS.—The Royal Academy of Medicine at Turin announce the competition for the "Riberi" Prize for 20,000 francs. The prize is awarded for research in medical science, and those desirous of competing may do so up till 31st December, 1916.

Forms of application may be had from the Secretary of the Royal Academy of Medicine of Turin, 18, Via Po.

NEW PREPARATIONS, &c.

From Messrs. Burroughs Wellcome & Co.

A number of pamphlets dealing with researches carried out in the Wellcome Physiological Research Laboratories. They are reprinted from the *Transactions* of the Chemical Society, from the *Journal of Physiology*, from the *Journal of Pharmacology and Experimental Therapeutics*, from the *Biochemical Journal*, and from the *Journal of Hygiene* during the past two years. They show useful and painstaking activity on the part of the workers concerned.

A *brochure* on "Physiological Criteria," which deals with the history of physiological standardisation, criticises former work on the subject, and states what is being done at the present. The digitalis group, cannabis indica, suprarenal gland extract and its allies, pituitary (infundibular) extract, ergot and its various active principles are discussed. It is a most interesting and instructive booklet.

From Messrs. Clay, Paget & Co., Limited.

Glycolactophos.—A fine white powder, practically odourless and tasteless. It may be made into a paste with water, milk, &c., and then further diluted in the fashion cocoa is prepared. It is said that it is entirely in the hands of the medical profession, and therefore it might be well to omit from the label the list of conditions in which its use is indicated. It is stated to contain 95 per cent pure casein, with 2½ per cent sodium glycerophosphate and 2½ per cent calcium glycerophosphate, and thus to be highly nutritious and at the same time a suitable method of administering the glycerophosphates in cases where their action is desired.

From Messrs. Menley & James, Limited.

Iodex Suppositories, which are suppositories advanced for the administration of iodine per rectum. They are of conventional shape, but are in reality capsules (apparently of hard gelatin) filled with the soft iodine-containing basis. The capsule is softened by submersion for a few seconds in warm water before being inserted. An elegant method of administering the drug.

From H. Trommsdorff.

A small pamphlet, dealing with the use and action of merjodin tablets. Each tablet is said to correspond to 0·0012 gm. iodine and 0·0033 gm. metallic mercury. These drugs are said to be combined in the form of the di-iod-paraphenol-sulphonic acid of mercury. They are advanced for use in the treatment of syphilis, and it is claimed that the toxicity is very low and that during prolonged administration hardly any irritating effect is produced on the stomach.

REVIEWS.

Practice and Problem in Abdominal Surgery. By A. Ernest Maylard, B.S. Lond. With 39 Illustrations. London: J. & A. Churchill. 1913.

The title of Mr. Maylard's latest volume is likely to attract the attention of medical readers, and we may assure such that if they open the book and study its contents they will not be disappointed.

The work is not a text-book or treatise on abdominal surgery. "There is no systematic attempt to deal exhaustively with the various organs that are usually comprised in what is now understood by abdominal surgery." It is rather a discussion of some of the "problems and practices which the subject embraces:" and increased interest attaches to it as the production of one who has been closely associated with abdominal surgery from its inception till the present time.

Though of small size—the volume numbers less than

400 pages—there are many subjects treated of in its twenty-three chapters. We do not propose to take up, or even to indicate, the whole of these, but shall confine our remarks to one or two which seem to us of special importance; and first of all we would direct attention to the chapter dealing with abdominal incisions.

In this chapter the author discusses thoughtfully the subject of abdominal incisions, and how best to avoid post-operative hernia. After describing the anatomy of the abdominal wall he writes, "If a firm, well-organised cicatrix depends upon the absence of tension between the freshly united margins of a wound, upon the free supply of blood to and from the part, and upon a ready absorption of exudates by means of abundantly distributed lymphatics, then it may be asked, How are these conditions best fulfilled in the case of incisions carried through the anterior abdominal parietes?" The answer is, by a transverse incision. And, be it noted, that the author does not force us to accept an unsupported dictum. He leads up to it by an exposition of facts which clearly show the foundation of his belief. He admits that in any case where time is a serious consideration "there can be no question as to the propriety of selecting the middle line." Again, in cases where prior to the operation there is doubt as to whether the condition be appendical, pyloric, or cholecystic, a vertical incision down the right linea semilunaris should be employed. Apart from these, however, the transverse incision is to be recommended, because it gives the best result as regards freedom from post-operative hernia, and because it gives better access to the viscera.

The chapter on peritoneal adhesions is also full of interest, and that on gastrostomy and the method of feeding after the operation is extremely practical. The chapters on chronic gastric ulcer and on pyloric obstruction are full of suggestive reading, and will appeal to general practitioners as well as surgeons. That the author is not afraid to confess to his own limitations the following sentence in the chapter on acute abdominal crises bears witness:—"We are frequently confronted with cases where at the operation our expectations fail to be realised, and we find what we did *not expect*." In this chapter the different causes of a crisis are considered, with the signs and information suggestive of a particular lesion, and the chapter concludes with outlines of the treatment of the various lesions.

Again, in the chapter on appendicitis, the author makes a plea for restraint in ventilating one's opinion until one has acquired some experience. He is very frank concerning his own shortcomings: "The presumption—and, I might still more forcibly add, the precocity—which marked my earlier emanations has been justly condemned by the entirely opposite views that I now hold as the result of maturer knowledge." In view of the experience of which the author is now possessed, the reader may safely give attention to his opinions. Particularly is this the case in regard to treatment. "To counsel delay is to court disaster," is Mr. Maylard's text, and his views regarding treatment are shared by the large majority of surgeons.

The remaining chapters deal with such subjects as diffuse peritonitis, cholelithiasis, tumours, &c.

Mr. Maylard has produced a volume of interest and of profit to all who may consult it. It should be read by all operating surgeons, and most general practitioners will derive benefit from a study of its pages.

Internal Secretion and the Ductless Glands. By SWALE VINCENT, M.D. London: Edwin Arnold. 1912.

PROFESSOR SCHÄFER gives a most eulogistic recommendation of Dr. Vincent's book in a short preface, and a careful study of the book itself will convince anyone that the high praise given is not undeserved.

Professor Beidl's book on the same subject—internal secretion—appeared in 1910, and to some extent Dr. Vincent's book is on similar lines, but for the English reader the present work represents all that is worth having on the subject. In fact, as the author states in his preface, the main outlines of the present work have been previously published in German in the *Ergebnisse der Physiologie*, and these outlines form the basis of the book in its English form.

In a number of the chapters there is a not inconsiderable proportion of the text taken up with considerations from the standpoint of comparative anatomy and physiology, and this part is necessary for a clear understanding of the deductions, although the ordinary medical reader will doubtless find some difficulty in following the author in this direction.

Dr. Vincent differs from Halliburton and others in refusing to include in the category of internal secretions such morphological elements as lymph cells in the lymphatic glands.

ova, and spermatozoa. He defines secretory cells as "highly specialized epithelial cells." Further, he defines internal secretion as "the preparation and setting free of certain substances of physiological utility (the raw materials for which are supplied by the circulating blood) by certain cells of a glandular type: the substances set free are not passed out on to a free surface, but into the blood-stream." Where, in addition to internal secretion, there is also a definite "excretion," as in the case of the liver, pancreas, &c., part at least of the functions of the component epithelial cells has been long understood, but Dr. Vincent classifies under the term "ductless glands" the following structures only:—Thyroid gland and parathyroids, adrenal bodies, pituitary body, thymus gland, corpus luteum, and chromaphil cells and bodies in different regions. The glycogenic function of the liver is not included by Dr. Vincent in the list of internal secretions. Beidl's term of "negative internal secretion," applied to the function of the liver in converting ammonia into urea, is happily altered to "internal excretion" by Dr. Vincent.

The interesting question as to the secretion of some "hormone" by the testicle and ovary receives consideration in pp. 67 to 88. The experiments of Grünbaum (reference 134) with regard to the theory of the possible causation of new growths through the presence of excess of hormone, either from excessive production or diminished absorption, are full of suggestiveness, and to all appearance this is the direction in which further investigations are required.

The chapter on the methods of investigation employed is a masterly one, and the reader cannot fail to be struck by the caution with which Dr. Vincent reads the results got by surgical entire removal of organs, such as the adrenals, pituitary, thyroid, &c. He emphasises the fact that such an anatomical and physiological shock can never occur in nature, and the results must therefore be to a considerable extent invalidated. Indeed, extirpation experiments have largely given place to those by which the organ is either crushed and left *in situ*, or artificially infected with the germs of disease. Experiments in the reverse direction, *i.e.*, feeding with fresh tissues or tissue extracts, are also most valuable in investigations into the question of internal secretion, and the present prominence of organotherapy owes its position to these experiments. As the result of many experiments in this direction it seems to be fairly well established that the only extracts which contain pressor substances, *i.e.*, which cause rise of blood pressure, are those from the adrenal and pituitary bodies, with the possible addition of kidney extracts.

In the chapter on the internal secretion of the pancreas, the author treats at some length the question as to whether or not the islets of Langerhans are to be considered as organs *sui generis*, or simply as slightly modified parts composed of essentially the same morphological and embryological elements as the zymogenous tubules. Dr. Vincent inclines to the latter hypothesis in spite of certain experimental and other evidence to the contrary. The question must be considered as *sub judice* at present.

The subject of internal secretory function of the kidney is surrounded with difficulty on account of the extremely important and evident function of external excretion, and, naturally, it is with regard to this organ that the most unsatisfactory results have been obtained by "interference" methods. Suñer holds the view that the kidney does not provide any internal secretion, but the evidence is not conclusive on either side.

With regard to the intestinal mucous membrane, the experiments of Bayliss and Starling appear to show that the external secretion of the pancreas is the result of the internal secretion of the duodenal mucous membrane. Should this be fully substantiated, new light may be thrown upon the question of operative procedure in cases of, *inter alia*, duodenal ulcer.

Dealing with the internal secretion of the adrenal bodies, the author brings prominently before our notice the vast difference, anatomically and physiologically, between the cortex and medulla of these organs, and points out that, while we have now considerable information relative to the medulla, we know really nothing as to the physiology of the cortex. That the adrenal bodies are necessary for life has been clearly established, but the exact nature of the internal secretion or secretions is not yet fully determined. The changes in these bodies in Addison's disease is very fully described by the author with the object of finding therein some explanation of the functions of the two parts of the bodies. In the morbid anatomy of Addison's disease, the constant change found was a fibrous or fibro-caseous transformation of the body, but even here the relative importance of involvement of the cortex and medulla remains unsolved. Much work still remains to be done in this direction. Dr. Vincent, however, gives us a very full and clear conception of the action of adrenal extracts. As a whole, the evidence points to the conclusion that the adrenal medulla is a true internal secreting gland, that adrenin is the product of its secretion, and that the elaboration is by the chromaphil cells of the medulla. In this connection it is interesting to note that these chromaphil cells are derived from the cells of the embryonic sympathetic system. Further, there are some grounds for the belief that the cortex may yield a hormone which influences the growth and nutrition of certain tissues and organs, especially the organs of reproduction. An antitoxic function has also been claimed for the cortex. Finally, there is every ground for the belief that the cortex and medulla are independent in practically every respect except that of anatomical contiguity.

The author deals on similar lines with the carotid and coccygeal bodies, the thyroid and parathyroids, the pituitary and pineal bodies.

Altogether Dr. Vincent's book is worthy of unstinted praise; such work has a great part in putting our conceptions of physiological and metabolic phenomena upon a scientific and experimental basis.

There are a number of excellent illustrations and diagrams, with copious references throughout the text and at the end of the book itself.

Lead Poisoning and Lead Absorption. By T. M. LEGGE, M.D., and K. W. GOADBY, M.R.C.S. London: Edwin Arnold. 1912.

ALIKE in scope, completeness, and lucidity of expression, nothing better than the present work on the subject of lead poisoning has been produced, and it must rank as the standard book on the subject.

The extended and extending use of lead compounds in diverse branches of the arts and manufactures renders it doubly opportune that we have at hand a work giving the most exhaustive investigations in all the aspects of lead poisoning, including the chemistry of lead, susceptibility, immunity, pathology, symptomatology, excretion, toxicology, treatment, and preventive measures. In only one particular is the book defective, and that is in the plates, four in number. These plates, while beyond cavil as far as actual reproduction of the photographs are concerned, are really of no value to the student seeking for pathological appearances produced in the organs by lead poisoning. Plate IV does not fall into this category, but this plate also is devoid of real value.

The short chapter on the historical aspect of the subject and the chemistry of lead and its compounds is one which contains a maximum of useful information within the smallest compass, and as a "refresher" will be found to increase the interest of the following chapters.

Dealing with etiology, the authors make the remarkable discovery that lead sulphate, the most insoluble of the lead salts, is as soluble in normal gastric juice as the carbonate and oxide. Lead salts, as a whole, being of the insoluble order—with the exception of the acetate and, of course, the nitrate—this is an important discovery, as it has been too readily assumed that the weak HCl in the gastric juice would be powerless to dissolve the sulphate, more especially as the lead chloride is itself of low solubility. The organic acids—lactic, acetic, butyric, &c.—often present in the stomach appear to exert a powerful action in the direction of increasing the solubility of lead salts at the temperature of the human body. The authors admit the difficulty of accurate quantitative estimation of the lead in these experiments, owing to the precipitation of the lead by various albuminous fluids, but there is no reason to doubt the accuracy of the conclusions arrived at. Phagocytosis of actual particles has also to be considered, to which the authors give due weight. On the cutaneous absorption of lead there are facts educed which suggest that while this channel must be admitted as a possible one, its importance is not very great in actual practice. The whole of this chapter is full of the most instructive points on lead absorption in general.

Dealing with susceptibility, it is brought out that women are more susceptible than men, especially when pregnant, and the use of lead compounds as abortifacients is thus explained on scientific grounds. Chronic alcoholism, again, is stated to be a strongly predisposing cause in lead poisoning, and here, again, we have the corroboration of what is a generally accepted statement, with the addition that the true cause is to be found in the renal changes produced interfering with the excretion of lead by the urine. Chronic intestinal diseases, malnutrition, anæmia, and other predisposing causes are indicated.

The chapter on the statistics of plumbism does not call for any special remarks, further than to note that the highest attack-rate per thousand is found in workers in tinning of metals and electric accumulator making, white and red lead and vitreous enamelling being considerably lower in ratio.

On the pathology of the subject most information will be found in the continuation of Chapter VI, which is the work of Mr. Goadby entirely. The experimental methods adopted put the work done on a sound basis, and while the results are in general those which might have been *à priori* expected, they are none the less of very great scientific value. The histological findings are interesting—the muscles in lead poisoning show fatty degeneration and minute hæmorrhages, the liver shows varied degeneration of the hepatic cells and general distortion of the lobular arrangement, the intestine shows atrophy of the intestinal wall with infiltration and hæmorrhages, the lung tissue shows a form of broncho-pneumonia, the nervous system shows multiple minute hæmorrhages with a surprising absence of true degenerative changes, and the renal tissue shows hæmorrhages mainly in the cortex. All the hæmorrhages are microscopical.

Dealing with the symptoms exhibited by animals experimented upon, the most striking result is that in all cases over a period of from one to three weeks, the animal showed slight *increase* in weight. This result the authors do not attempt to explain.

In the chapter on symptomatology and diagnosis there is naturally less that is new, but all the information which is of any value is fully recognised by the authors. With regard to the well-known blue line on the gums, the authors properly point out that this is not a sign of lead poisoning but only of lead absorption, the two conditions not being necessarily co-existent.

As to the channels of excretion, the authors' opinion is that the kidneys are not only the chief but practically the only channel of any importance.

The changes in the blood in lead poisoning are carefully studied, and it is in this department that recent methods of investigation have given results of the utmost value. The changes in the blood are very definite and almost specific in most of the cases of advanced lead poisoning.

The forms of lead paresis are described in detail, but here again there is little to add to our previous knowledge.

The chapter on chemical investigations is perhaps the most important chapter from a medico-legal standpoint, and it is satisfactory to find that the authors realise that in the case of lead the general methods of toxicology are, on the whole, not applicable owing to the peculiarly insoluble nature of most of the lead compounds, and the puzzling combinations into which lead enters with the animal tissues and juices. The best method for the *post-mortem* detection of lead is that of Shufflebotham and Mellor, and this method is given in detail on page 169. Essentially it depends upon the fact that boiling nitric acid will dissolve any organic matter, and at the same time convert the lead present into the soluble and stable lead nitrate. The method of Shufflebotham and Mellor should be the standard one in all toxicological investigations in lead poisoning. Excess of acid in the end reaction must be avoided, and this fact is not sufficiently indicated in the description, but a little chemical knowledge will avoid any error.

The chapters on treatment and preventive measures are excellent, but call for no detailed review: naturally, there is little scope for originality in dealing with these aspects.

The final chapters, on the various processes employed in the extraction and commercial uses of lead compounds, are again excellent, full of information, and eminently readable; many of the processes suggest in themselves the possibility of prophylactic methods. These chapters, indeed, are so important that possibly it might have been better if they held a place in the early portion of the work instead of at the end.

The references at the end of each chapter are copious, and will be found of value to those who wish to go further into a subject which is of such national importance.

While, naturally, of most importance to the practitioner in large manufacturing districts, this is a book which will be of much value to every member of the profession.

Digitalis Assay. By W. H. Martindale, Ph.D., F.C.S.
London: H. K. Lewis. 1913.

In this small book a method of assaying digitalis is discussed. The method is chemical and calorimetric, and it is advanced by the author that, while not comparable to physiological methods, and while it is not claimed to be absolutely accurate, it will show whether a tincture of the drug is above or below standard. The process requires the apparatus of a laboratory, and is said to take about three hours to carry out. The author, in his conclusions, states that the routine use of animals in assays is not justifiable if a chemical method can be devised to produce equivalent results.

It will take time to determine if the process described is all that may be required for "placing" tinctures of digitalis, but the author is to be congratulated on his industry, and on the ingenuity displayed in his research.

Malingering and Feigned Sickness. By SIR JOHN COLLIE, M.D. London: Edward Arnold. 1913.

THE author dedicates his book to "my friend, the British workman, to whom I owe much," perhaps an unfortunate dedication, looking at the title.

In the preface the suggestive fact is pointed out that since the inception of the Compensation Acts the statistics show an increase in the number of non-fatal accidents, and the connection is, of course, apparent. The inevitable result is the appearance of a number of books dealing with the subject of malingering, and Sir John Collie's work is perhaps the best on the subject.

In the first chapter the heading is "What is Malingering?" but no definition is given. The remarks on psychology of the fraudulent mind give a very clear insight into the origin of many of the claims fraudulently made, the fraud being not complete but due to exaggeration of minor subjective symptoms. On the whole the penalties for malingering are not severe enough in undoubted cases, but most courts would hesitate to brand a claimant as a malingerer unless overwhelming evidence were produced to that effect. Indeed, an absolute malingerer appears to be a rarity, as the production of factitious disablements can hardly bring the originator under that category. Here, however, the want of a proper definition of the term malingering is confusing.

The position of the club doctor in cases of suspected fraudulent claims is truly an unenviable one, and in spite of all that has been or ever will be written on malingering, there are very many cases in which no amount of the most patient and thorough investigation by every known means will solve the problem. Then it must be remembered that to investigate to the full all these cases demands such an expenditure of time that the club doctor simply cannot be expected to give so much of his professional time to the purpose, and the malingerer knows this only too well.

The book contains throughout many illustrative cases quoted in full, and these are certainly of considerable value in many instances.

Although not definitely associated by the author with actual malingering, the remarks on pp. 23-25 with regard to the presence of albumen and sugar in the urine are well worth keeping constantly in mind in the routine examination of urines, in club cases particularly.

Perhaps the most interesting and valuable part of Sir John Collie's book is Chapter III, dealing with the medical examination. This chapter is copiously illustrated with selected cases.

Chapter IV, on examination of the nervous system, is a very valuable one, and many hints of the greatest value are given here. For example, the differentiation of hysteria from neurasthenia is naturally of very great importance. The author points out that neurasthenia is as common in men as in women, while true hysteria is much more frequent in the latter. Then, again, "functional nerve diseases" form a group which requires most careful and skilful examination for their elucidation.

Examination of the organs of hearing and sight gets rather superficial treatment by the author, but probably it is felt that the aid of specialists is essential in most cases requiring detailed investigation of these organs.

Chapter VIII deals with examination of the back. Although Sir John Collie properly points out in the opening sentence that this is the most common affection for which compensation is claimed in the law courts, the subject (inclusive of pages of illustrative cases) receives only twenty pages. Clearly this is inadequate. This chapter is the one to which medical men will turn for information more often than any other, and it should be considerably amplified. Examination of the extremities receives the same scope, and even here there is room for considerable amplification.

The use of x-ray photography gets scant treatment indeed in five pages; this chapter should be entirely re-cast and enlarged greatly in the next edition, as its importance is rapidly increasing. To some extent these remarks apply also to Chapter XII, dealing with the use of electricity in alleged malingering.

Hernia and malingering is succinctly treated, and much valuable information is given in this chapter. The chapter following, dealing with epilepsy, apoplexy, heat-stroke and malingering, is also of considerable value. The actual confusion of epilepsy and apoplexy is hardly possible if even ordinary skill is observed, but the tabulation of the differential symptoms here given is handy for rapid reference.

Feigned insanity receives less than five pages for its consideration. This is undoubtedly too little, but, on the other hand, it must be admitted that in this department cases must, where doubt exists, fall under the observance of experts in insanity.

Hæmorrhage from the mouth and bowel in malingering is a well-known phenomenon, and the investigation is comparatively simple in most cases.

Chapter XX, on the conduct of the medical witness in court, should be carefully studied by all potential or actual medical witnesses. It is difficult in many cases, however, to act up to the strict interpretation given here, which must be followed by *both sides* to be of real value. Unfortunately, many medical witnesses, consciously or unconsciously, become partisans in the witness-box.

Chapters on the Compensation Acts and on electrical testing conclude the work in a fitting manner.

The illustrations and illustrative cases are numerous, and, of themselves, form a mine of information.

Vicious Circles in Disease. By JAMIESON B. HURRY, M.A., M.D.Cantab. Second and Enlarged Edition. London: J. & A. Churchill. 1913.

"BY a vicious circle is meant a morbid process in which two or more disorders are so correlated that they reciprocally aggravate and perpetuate each other." Circles are here classified into what the author terms their natural orders, and some examples from each are given. The various systems of the body are then taken *seriatim*, so that attention may be drawn to ailments which are liable to this complication; after which it is pointed out how the same condition may be induced, not only by disease, but also through bad habits on the patient's part, and even by the impatience of over-zealous doctors. General principles are discussed in a chapter entitled "The genesis of the circle." Emphasis is laid on the necessity of breaking the circle before recovery can take place, and when nature fails it is indicated how the art of the physician or surgeon may succeed. In the majority of instances examples of vicious circles and their cure are rendered in the actual words of some writer other than Dr. Hurry himself, who shows an astounding familiarity with contemporary and classic literature.

This is a most thoughtful and suggestive book that appeals to the practical as well as to the philosophic amongst us; for, while conveying a clearer comprehension of the subtle interworkings of pathological processes, it cannot but make for greater logicality and certitude in treatment. The present edition is larger than the first by six new chapters, and has been thoroughly revised. It is skilfully and helpfully illustrated with numerous graphic diagrams.

The Treatment of Infantile Paralysis. By OSKAR VULPIUS, M.D. Translated by ALAN H. TOD, M.B., with Introduction by J. JACKSON CLARKE, M.B., F.R.C.S. London: Baillière, Tindall & Cox. 1912.

To anyone who studies the medical periodicals, with their reviews of new books and the publishers' lists which appear in their advertisement pages, it must be very evident that the subject of orthopædics is receiving a considerable amount of attention. This is not to be wondered at when we reflect that this department of medicine is concerned not merely with the correction of deformities as such, but also with the restoration, as far as possible, to normal of impaired mechanical function in different parts of the body and limbs.

It would be difficult to imagine within the realm of orthopædics a subject more important than infantile paralysis; and it is with the treatment of this disease, and more particularly of its late results, that Professor Vulpius's treatise is concerned. The work is in two parts, dealing respectively with treatment generally, and with treatment of paralyses of special regions.

Part I is prefaced by a consideration of the symptomatology, ætiology, and pathological anatomy of the disease. The general treatment in the acute stage and stage of repair during the first year of the illness is then taken up. It is followed by a very clear account of orthopædic apparatus, and then the author considers in detail the "surgery" of paralyses. Under this heading he describes (1) the treatment of contractures and deformities by "redressment," tendon lengthening, and tenotomy; and (2) he discusses the various methods whereby function may be restored. These methods comprise muscle implantation, arthrodesis, tendon shortening and transplantation, and, lastly, nerve transplantation. Transplantation of tendon and of nerve is given in great detail, and the author indicates what, in his opinion, are suitable cases for these procedures. In connection with the last he contributes the results, so far as at present ascertained, of Dr. Stoffel's researches on the "internal anatomy" of nerve trunks. This subject is fascinating, and, as may be understood, is likely to have an important bearing on the details and results of operative treatment. Professor Vulpius is more in favour of tendon operations, both on account of their insuring recovery of power in the muscles and of the rapid result obtained by this method.

In Part II paralytic conditions in the various regions are considered, and their treatment discussed. In this section of the work clinical summaries add much to the value of the text.

The author has gone into the subject with great thoroughness, and has produced a book well worth reading. The volume, which is well translated, is fully illustrated, and we can recommend it to our readers as giving in addition to the author's views a careful and exhaustive account of what is known concerning the treatment of infantile paralysis.

Diseases of Women, a Clinical Guide to their Diagnosis and Treatment. By G. E. HERMAN, M.B., F.R.C.P., F.R.C.S, and R. DRUMMOND MAXWELL, M.D., F.R.C.S. London: Cassell & Co., Limited. 1913.

IT might seem superfluous to say much in the way of review when a book has reached its fourth edition, as this is sufficient evidence that it has already found favour. The previous editions have been entirely from the pen of Dr. Herman, but on this occasion the author has called in the services of Dr. Maxwell and with happy results. Dr. Maxwell has been specially responsible for bringing the parts relating to operative technique down to date, and by expressing the views of other operators has greatly enhanced the value of this latest edition to the student reading for examination. Dr. Herman has rightly taken the broad view that the methods of one operator are not necessarily to be commended as the best for everybody, and this is specially important as there is a constant endeavour to try and improve on older procedures.

We do not agree with all the authors say, such as the recommendation to use silk for ligatures inside the abdomen when time has proven the reliability of properly prepared catgut, or the method described of opening the abdomen and closing it in one layer, when opening and closing in overlapping layers have undoubtedly diminished the after-risk of incisional hernia, nor have we found the treatment of gonorrhœal vaginitis quite so simple as the authors seem to infer. At the same time we can say that no more reliable work on diseases of women could be placed in the hands of the student. Dr. Herman has had a large clinical experience, he has been a keen observer, and he knows how to impart his ripe knowledge to others, so we can cordially recommend this clinical guide to the student or practitioner who desires a thorough grounding on the general principles of gynæcology. The book is beautifully printed, well illustrated, and has a most extensive general index.

We would direct attention to Fig. I, representing bimanual examination, as it is incorrectly drawn. The vaginal fingers should be shown palpating forwards.

Diseases of Women. By THOMAS GEORGE STEVENS, M.D., B.S.Lond., F.R.C.S.Eng., M.R.C.P.Lond. London: Henry Frowde and Hodder and Stoughton. 1913.

THIS book is the outcome of ten years' experience in teaching gynæcology. The author considers "that gynæcology must be presented on a pathological basis in the same manner as medicine and surgery, and that when presented in this manner the theoretical side, at least, of the diseases of women is no harder to acquire than that of the sister sciences." However, he has not strictly adhered to a pathological basis, but for convenience has adopted a compromise between a purely pathological and an anatomico-clinical classification.

In many respects this method of treating the subject is an admirable one. After dealing with methods of diagnosis, anatomy, development of the generative organs, and abnormalities, menstruation and its anomalies are discussed, and then the infections of the generative system and the pathological effects of parturition and accidental injuries are taken up. Then come displacements and disturbances of sexual functions, followed by a full discussion of the anomalies of pregnancy. The urinary system has a chapter to itself, and then the general conditions associated with pelvic disorders are considered. The largest section of the book is devoted to new growths of the generative system. The remainder of the book is devoted to the general consideration of the preparations for operations, technique, treatment, and post-operative complications. It will thus be seen that the book is arranged on a plan which is somewhat different from that usually adopted.

While the book is not an exhaustive treatise, it is a valuable contribution to the literature of gynæcology. It is written in a style which makes pleasant reading.

There are many original illustrations, and a number of photo-micrographs which have been produced by direct photography upon a plate exposed in the rays of the epidiascope. The resulting pictures are very good.

We have much pleasure in recommending the book.

Medical Diseases of Children. London Medical Publications. By T. R. C. WHIPHAM, M.A., M.D.Oxon. London: University of London Press (Henry Frowde and Hodder & Stoughton). 1912.

THE volume before us is one which is likely to fill a very useful place in the literature of diseases of children. A comparatively short and at the same time comprehensive account of the subject, for the use of students and of those practitioners who have not leisure for the more encyclopædic text-books, has long been wanted. This want Dr. Whipham has set himself to supply, and he has done so in a fashion which leaves little scope for criticism. He has the faculty of clear description, and his style is for the most part easy and readily comprehensible. In a book of the size of the present volume there are, of course, omissions; it would be impossible to include all the less common diseases of childhood. But those affections which are likely to be met with in ordinary practice are handled with judgment, and what is essential for their presentation is put before the reader without overloading his attention with a mass of secondary detail. Occasionally a point of recent pathology has been overlooked; for instance, in connection with hæmophilia, there is no reference to the work of Addis, and the statement that anæmia is generally present in rickets takes no cognisance of Findlay's research. Under the subject of rickets, too, it is surprising, in view of Dr. Whipham's generally perspicuous writing, to find the following sentence:—"The question whether true rickets is actually congenital is likewise very improbable." But these are minor blemishes, and detract but little from the excellence of a book which may be heartily commended to students of pædiatrics, both for its text, and also for the unusual perfection of its illustrations.

A Short Practice of Midwifery, embodying the Treatment adopted in the Rotunda Hospital, Dublin. By Henry Jellett, B.A., M.D.Dubl., F.R.C.P.I.; with a Preface by Sir Wm. J. Smyly, M.D., F.R.C.P.I. Sixth Edition, revised. London: J. & A. Churchill. 1913.

It is not necessary for a reviewer to say much about a book which has reached a sixth edition, and which has been brought up to date, but there is one mistake which we wish to point out. In dealing with the treatment of eclampsia the author credits Jardine, of Glasgow, with recommending intravenous injections of bicarbonate of potash. The solution Jardine uses is one of acetate and chloride of sodium, one drachm each to the pint. The solution is also wrongly given in the author's larger book. A writer should be specially careful when he deals with the methods of other men.

A number of new illustrations have been added, and the statistics of the Rotunda Hospital have been brought up to date, giving an analysis of 36,227 cases of labour.

The book is an admirable exposition of the methods of treatment adopted in the Rotunda Hospital at the present time.

Diagnosis of Bacteria and Blood-Parasites. By E. P. Minett, M.D., D.P.H., D.T.M. & H., M.R.C.S., L.R.C.P. Second Edition. London: Baillière, Tindall, & Cox. 1913.

We would call the attention of our readers to the new edition of this little work, which strikes us as good in quality and very convenient in size. The author has included in this edition a short summary of the more common blood-parasites, and has made room for it, without materially increasing the size of the book, by eliminating a number of duplicate staining methods.

The "Nauheim" Treatment of Diseases of the Heart and Circulation. By LESLIE THORNE THORNE, M.D. Fourth Edition. London: Baillière, Tindall & Cox. 1913.

DR. THORNE THORNE'S little volume, which gives an exhaustive account of the methods of treating cardiac disease by the "Nauheim" system of baths and exercises, and of the manner in which the treatment can be carried out at home, has proved its popularity and its usefulness by attaining a fourth edition. The cases have been brought up to date, and new material has been added, including polygraphic and electrocardiographic records of the progress of some of the cases. In its latest dress the book will, as hitherto, serve a useful purpose in indicating that it is unnecessary to add to the expense of the "Nauheim" treatment the expense of foreign travel, and that in appropriate cases benefit may equally well be obtained at the hands of the native practitioner.

Guide to Promotion for Non-Commissioned Officers and Men of the Royal Army Medical Corps. Compiled by Captain S. T. BEGGS, R.A.M.C. (Reserve of Officers). Third Edition. London: Gale & Polden, Limited. 1912.

IN this *Guide*, which is a volume of handy size, there is brought together from various official publications the information of which a soldier of the Royal Army Medical Corps is required to be in possession before he is promoted to the rank of corporal, sergeant, or staff-sergeant. In addition there is a chapter on semaphore signalling, and an appendix containing hints for young N.C.O.'s on clerical and other duties in a military hospital.

Besides giving information in the ordinary form, the compiler has resorted to the "question and answer" method, by which the candidate for promotion can test his knowledge of the subject.

All territorial medical officers should possess themselves of a copy of the *Guide*, and the civilian will also find it of interest as showing the medical knowledge expected of the rank and file of the Royal Army Medical Corps.

The Surgery of the Rectum for Practitioners. By SIR FREDERIC WALLIS, M.B., B.C., F.R.C.S. London: Henry Frowde and Hodder & Stoughton.

THIS book is an enlarged edition of one published in 1906. The last proofs were corrected but a few days before the author's death. The aim of the book is to present the surgery of the rectum of the present day in a practical and condensed form, and this aim has been realised thoroughly.

The common ailments of the rectum are well presented, more especially the chapter on catarrhal and inflammatory conditions. The last chapter deals with rectal diseases in children, and there is a special chapter on venereal diseases of the rectum. The illustrations and printing are good.

Lang's German-English Dictionary of Terms used in Medicine and the Allied Sciences. Second Edition. Edited and Revised by MILTON K. MYERS, M.D. London: J. & A. Churchill. 1913.

IN this edition there are 4,400 definitions additional to those in its predecessor: the latter have been revised and corrected.

The definitions are short and simple, and the reader is thus enabled to find very quickly what he wants. Ease of reference is further ensured by the boldness of the type.

We have had occasion to make use of the *Dictionary*, and we can with confidence recommend it to anyone commencing the study of, or engaged in reading, German medical literature.

Geburtshilfliches Vademekum (*Vademecum of Obstetrics*). Tenth Edition. By PROF. DR. A. DÜHRSSEN. Berlin: S. Karger. 1913.

FEW books on obstetrics have enjoyed a greater popularity than Dührssen's compact manual, which, in previous editions, has been translated into English, French, and other three European languages. The present volume is the tenth German edition, so that it is only available to readers of that language.

Professor Dührssen writes in a pithy style which might well be copied by some other German authors, and has given all the salient points on obstetric practice in a volume of 300 pages which can be carried in the pocket, and which is sold at a price that only old editions in this country reach.

The teaching is essentially that of the German school, and we still find the blunt hook recommended for decapitation, but all the same Dührssen's *Vademecum* will still receive a warm welcome.

The absence of a full index is a great want, and it is difficult to find the subject matter quickly. A good index would greatly enhance the value of what otherwise is an excellent manual.

Verhandlungen der Berliner medizinischen Gesellschaft, aus dem Gesellschaftsjahre, 1912. Berlin: L. Schumacher. 1913.

THIS volume contains the proceedings of the Berlin Medical Society for the year 1912.

The table of contents gives at a glance the programme carried through during the session, and shows it to be as varied as one would expect. As examples of the contributions we may mention peroneal palsy resulting from constriction by amniotic bands, septic endocarditis, radium therapy, x-ray treatment of myoma, ovarian transplantation, demonstration of heart sounds by means of electric transmission through the cardiophone, benign and malignant polypus of rectum.

The result is a volume which will be referred to by specialists as well as by general practitioners.

Leitfaden der Praktischen Kriegs-Chirurgie. Von DR. WALTER VON OETTINGEN, Chirurg. in Berlin-Wilmersdorf. Dresden u. Leipzig: Verlag von Theodor Steinkopff. 1912.

IT was while serving as chief surgeon to a Red Cross field hospital in the Russo-Japanese war that Dr. von Oettingen felt the want of a guide to practical military surgery. In the little work now before us he seeks to meet such a want.

The book is in two parts, a general and a special. The first deals with the general principles of surgical treatment in war. Beginning with a short consideration of the various firearms and weapons, the author passes on to gunshot wounds of tissues and organs, and their general effects on the organism; injuries received in mining, *e.g.*, explosions and burns; sword cuts; and injuries caused by hands and teeth. He then gives a brief outline of wound-infection. This section is followed by one on asepsis and antisepsis in the field. Succeeding sections deal with general treatment, in the field, of shock, hæmorrhage, and various wounds, and the administration of narcotics, and the housing and nursing of the wounded. The organisation of transport and dressing stations and the field hospital conclude this part of the work.

Part II deals with the special characters and treatment of wounds of different regions of the body.

From our perusal of various portions of this work we are favourably impressed with its usefulness, and with the skill which the author shows in compressing within small space such a large subject as military surgery. For those of our military surgeons who read German the volume will prove a handy and reliable guide; for others we could wish that a translation were available, so as to place its contents within their reach.

Deuxieme Congres de l'Association Internationale d'Urologie, Londres, le 24-28 Juillet, 1911. Proces Verbaux, Rapports et Diccussions. Publies sous la direction de JOHN G. PARDOE, F.R.C.S. Londres: Adlard & Son. 1912.

THE proceedings of the second congress of the *Association Internationale d'Urologie* form a volume of considerable size. The original papers appear in the language in which they were read, and each is followed by a summary in English, French, German, and Italian. The summaries, again, are succeeded by reports of the discussions.

Three "questions" were considered by the congress—(1) Phosphaturia and oxaluria; (2) remote results of prostatectomy; and (3) extensive resections of the bladder.

It is evident at a glance that much care has been expended by their authors on the writing of the papers introducing the various discussions. These papers are of considerable length, and, while those who are specially interested in the subject will doubtless read them through, the ordinary reader will find the summaries following the papers and discussions of great use in enabling him to get at the main points of the subject.

This volume of *Proceedings* may justly be considered a valuable work of reference.

Le Laboratoire: Du Praticien. Deuxieme fascicule. By PAUL GASTOU. With 24 Plates containing 423 Figures and Photographs by LOUIS NICLET. Paris: A Poinat. 1913.

THE author and the illustrator of this work deserve equal praise for the production of a concise exposition of the various clinical laboratory methods of examination of blood, the cytodiagnosis of exudates and transudates, and the vegetable and animal parasites of disease.

The illustrations are exquisite, many being in natural colours: indeed, in this respect, there is nothing approaching the present work to be found in the English language. Particularly is this the case with regard to sporotrichosis, the lesions and cultures being perfectly represented. When it is considered that sporotrichosis is not infrequent in this country, and that in most cases it is not diagnosed, it is remarkable that the subject is ignored in most of our textbooks. Dark-ground methods of illumination are employed to show up many of the unstained organisms, such as the spirochæta pallida, thrush, trypanosomes, &c.

In the section on blood there is no reference to Jenner's stain, and this part suffers in consequence; while the methods of obtaining blood films are inferior to those employed in many of our home laboratories. In the same way no mention is made of the Neisser method of staining for diphtheria, and the figures given by the polychrome blue and the gentian violet are much inferior to those got by Neisser or one of its modifications, such as that with Gram's iodine.

The section on the protozoa of disease, on filariasis, and on bilharzia, is of special excellence, and the illustrations of this part are beautiful and perfect.

As a guide to clinical investigation nothing could be better than the present work, and it well deserves an English edition.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

SURGERY.

Fracture of the Sternum. By Dr. W. v. Brunn (*Zentralb. f. Chirurgie*, 26th April, 1913).—On account of the rarity of fracture of the sternum, especially by indirect violence, the author thinks that the publication of three very similar cases occurring in his own practice is fully warranted.

The fractures were all due to similar causes, viz., the falling of a heavy weight on the back of the neck. In all three the fracture took place at the junction of manubrium and body of sternum, yet each was of a different type.

In the first case, that of a man of 49 years on whose neck a bale weighing more than one cwt. fell, the fracture was transverse, and even now a ridge can be felt. This patient also had several ribs broken. He resumed work after thirty days.

In the second case the manubrium was displaced and slipped in front of the body. There is still a step-like projection felt. The accident was somewhat similar to the above, but the author draws special attention to the fact that the sternum was the only part of the body injured.

The third was that of an ill-nourished woman, of 45 years, who was struck on the nape of the neck by a weight of 80 lbs. Here the body of the sternum was displaced in front of the manubrium, and the projection is still easily made out. This patient sustained, in addition, a fracture of the malleolus of the right fibula.—CHARLES BENNETT.

Surgery of Prostatic Atrophy. By Dr. H. L. Posner (*Zeit. f. Urologie*, Band VII, H. 4, 1913).—The author has, on several occasions, been called upon to deal with two apparently opposite morbid conditions of the prostate, namely, hypertrophy and atrophy, presenting very similar appearances.

In well-marked cases the decision often hangs entirely upon local conditions, and after operating for hypertrophy and finding atrophy, one may be put to it to justify the diagnosis.

According to anatomical statistics, the atrophic condition is no rare one, yet only occasionally does the suffering caused by it bring the patient to the physician, and still more seldom to the surgeon.

The complaint, when made, is referred to some abnormality of the bladder function, and so opens up a complicated process of differential diagnosis. The diagnosis once made, one commonly is content with conservative therapeutic measures, though Barth claims to have cured patients by prostatectomy, and has pointed out that this method is most applicable to the atrophy resulting from chronic inflammation or from senility.

The author appends reports of four operated cases, of which these are two:—

1. Man, aged 51 years, had gonorrhœa twenty-five years before. For five

years before coming to hospital there was smarting in the urethra, and increasing difficulty of micturition. Finally, the urine passed in drops, with great pain, but retention was never complete. Examination revealed a small, tender prostate and atonic bladder.

Wilm's perineal operation was performed, and the gland, not permitting of easy resection, was removed piecemeal. The bladder was opened and drained. Microscopically the prostate showed inflammatory infiltration round scanty gland-tissue. By the thirtieth day the patient could retain urine for several hours with comfort, and was dismissed.

2. Patient, aged 61 years, with no other illness in his history, had for several years increasing difficulty in micturition, culminating in complete retention, necessitating the catheter on the four days preceding his admission to hospital. Examination did not suggest abnormality in the size of the prostate. Perineal prostatectomy was performed, the gland being somewhat easily shelled from a dense capsule. Patient left on the twenty-sixth day, able to retain urine for several hours comfortably.—CHARLES BENNETT.

The Implantation of Silk in Poliomyelitis Paralysis (*American Journal of Orthopedic Surgery*, May, 1913.)—B. BARTOW and W. W. PLUMMER present a second paper on the implantation of silk into the articular ends of bones where the joint has been rendered useless by paralysis.

The idea is advanced that a limiting and reinforcing effect follows in the joint from inflammation due to the trauma of operation and the presence of a foreign substance. The silk strands become practically converted by organisation into living tissues.

The authors have employed the procedure in fifty joints, and have made the following observations:—

In no case has infection followed implantation, and the silk has never shown any tendency to cut its way out. It is better to use thin silk, doubled or quadrupled, than a single heavy strand. Twenty to twenty-four weeks should elapse before unprotected use of the joint is permitted. The valgus type of foot deviation relapsed more often than others because of its frequent association with knock-knee.

When dealing with the foot it is necessary to remove fascial contraction and all resistance preventing the over-correction of the deformity before introducing silk.

The operation for the knee-joint is as follows:—A small incision, ½ to ¾ inch long, is made over each condyle in line with the lateral border of the patella. The drill is pushed through the condyle, the joint, and the head of the tibia, to emerge near the side of the insertion of the patellar tendon. A puncture through the skin over the point of the drill allows it to protrude. Both ends of a piece of aluminium bronze wire are threaded into the eye of the drill. The silk is then dropped double into the loop of the wire and pulled through the bones as the drill is withdrawn. The same is done on the opposite side of the knee. The drill is again inserted in the incision and tunnelled through the soft tissues in the same line, close to the bones, to the point where it emerged from the tibia, the bones not being penetrated, and the other end of the silk is pulled through the soft parts *over* the bones. The ends are tied with the leg in full extension. The incisions are stitched and dressed, and the limb is put up in plaster.

Special drills are used for these operations. For the ankle the procedure is essentially the same as for the knee.

In the deltoid and arm type of paralysis the humerus is slung on the acromion by two parallel silks passing through the acromion and the head of the humerus.

Photographs of eight treated cases are shown, suggesting excellent results.

NATHANIEL ALLISON treats of results obtained by implantation of silk tendons.

He is of opinion that arthrodesis should not be done in patients under twenty years of age, and that, especially in the foot, excellent results follow fixation with artificial ligaments and tendon transference. The use of silk strands implanted in the tissues about the unstable joint to check excess of movement may now be said to be the operation of choice.

The fate of the silk is interesting. The tissues, instead of attempting to rid themselves of it, use it as a trellis upon which to build fibrous bands.

Typical operative procedure for the foot is described by the author:—He introduces the silk in a continuous cord, drills the tarsus and passes the silk through a hole of small calibre in the bones from tendon insertion to tendon insertion across the foot, then passes the silk up the tendon sheath to a point of exit high on the anterior surface of the tibia, here tying the ends, after suture to the periosteum. In the os calcis two small holes are drilled from the plantar surface of the bone to either side of the insertion of the tendo-Achillis, the silk is then passed upward on both sides of the tendon, and the loop at the heel is brought taut, when the silk is sutured to the tibial periosteum. The passing of these silk strands up the tendon sheaths is accomplished by a long flexible probe, which has an eyelet at its end.

—CHARLES BENNETT.

Subcutaneous Bruising of the Pancreas. By Dr. Hagedorn (*Zentralb. f. Chirurgie.*, 25th January, 1913).—In the summer of 1912 the author had the opportunity of treating, almost at the same time, two cases of subcutaneous bruising of the pancreas.

The first was that of a young man who, three days before admission, had been run over by a cart, one wheel passing over his abdomen. After admission he vomited large quantities of blackish material. There was bruising of the abdominal wall, and the abdomen was tense, distended, and tender all over. The pulse was rapid but the temperature normal. Neither albumen nor sugar was found in the urine. Relief of all the symptoms was afforded by gastric lavage and the improvement was maintained for five days. At the end of this period, however, there was a return to the original condition, and once more washing out of the stomach was successful. After this period of well-being the patient became so ill that laparotomy was performed on the fourteenth day. When the abdomen was opened there was found to be a considerable quantity of blood-stained fluid in the cavity, but no agglutination of peritoneum was seen. The omentum and mesentery were studded with small particles of necrosed fat. On the pancreas being exposed through the mesocolon, two loops of bowel were found to be slightly glued together, but the eye detected nothing abnormal about the pancreas itself. The fluid was mopped out and drainage instituted.

During convalescence the left parotid was incised to liberate pus, and the patient also suffered from acute diarrhœa; nevertheless, he was dismissed cured at the end of eight weeks.

The second case was that of a seven-year old boy whose chest had been injured by a cartwheel. On admission to hospital a few hours after the accident the patient appeared to be desperately ill. Vomiting was severe and the abdomen was distended, with general tenderness. The pulse was rapid but temperature normal. Next morning collapse set in and the abdomen was opened. Blood stained fluid was present in the cavity, but the peritoneum was smooth. Fat necrosis was obvious in the omentum and the mesentery. The pancreas itself appeared normal. The fluid was removed and the abdomen completely closed. Patient was dismissed well on the sixteenth day.

In his discussion the author draws special attention to the presence of fat necrosis in both the cases, and he points out that, if we are to judge from the reports of cases of injury to the pancreas, so many of which are now appearing, this condition is quite often absent.—CHARLES BENNETT.

DISEASES OF THE SKIN.

A Case of Alopecia and Tinea Tonsurans (*British Journal of Dermatology*, April, 1913).—At a meeting of the Dermatological Section of the Royal Society of Medicine, Dr. E. G. Graham Little showed a case of alopecia areata and tinea tonsurans. There was no alopecia until the ringworm developed. That order of events, he remarked, was common. The alopecia usually lasted for six months, and the hair grew again. He had not known such a case remain permanently bald. Dr. Little thought the alopecia could arise without there being any inflammatory disturbance.

Dr. Stowers remarked that he published a case some years ago in which the two disorders occurred simultaneously on the scalp of a patient, and eventually coalesced.—WM. BARBOUR.

On a Small Epidemic of an Areate Alopecia. By T. Colcott Fox, M.B., F.R.C.P. (*British Journal of Dermatology*, February, 1913).—The author describes an epidemic of alopecia areata, in which twenty-one schoolgirls were affected, their ages ranging from 9 to 14 years.

The patches ranged from the size of a finger-nail to a shilling, but all were seen at an early stage. In almost all cases there was only a single patch.

The cases, he states, were certainly alopecia, but were of a similar type in every case, and he concluded that the type was a special one. Repeated microscopical examinations of the stumps and plugs failed to disclose any organism, nor could any be cultivated.

They yielded readily to the application of an unguentum hydrarg. oxidi rubri with cantharides, and no further patches developed.

In the author's experience any evidence of the contagion of alopecia areata is very scanty, though the disease is very common. He has seen many examples of family alopecia areata in which members of a family were affected at different ages, but without the striking evidence of contagion seen in ringworm, and the tendency to recurrence is very striking in contrast to ringworm.

The clinical features were those of an areate alopecia. The author has had experience of the very rare concurrence of ringworm and alopecia areata, but has never seen proof that the alopecia may directly be a sequence of ringworm. It would not be surprising, he remarks, if those two conditions, so common in childhood, should occasionally co-exist in the same person. That this occurrence is extremely rare is shown by the fact that, out of many thousands of cases seen at the Downs School, not one single example has been met with. The author's experience of ordinary alopecia areata is that it is not contagious.

He refers, in conclusion, to two epidemics, in one of which 1,100 school children were affected. Though clinically an alopecia, a tricophyton was found. The author of this paper does not feel convinced that this was a ringworm outbreak.

In another epidemic, 63 out of 69 children in an institution were attacked. All recovered except the original patient, who went to reside with a woman whose husband soon developed alopecia. Six years later the original patient was again re-admitted to the institution, and in a few months 26 out of 45 children were attacked.—WM. BARBOUR.

The Ætiology of Molluscum Contagiosum. Kreibich (*Archiv. f. Dermat. u. Syph.*, January, 1913).—In genital cases, in which the central pore or depression was obvious, Kreibich succeeded in finding spirochætæ of the refringens type. His observations were entirely confined to genital cases, and he is of opinion that the infection in such cases is secondary, as the spirochætæ were not found in those lesions in which the central pore had not developed.

The method was to squeeze out the plug of epithelial *débris*, and examine in saline in the dark-ground microscope. Levaditi's and Giemsa's stains were also used successfully. To the similarity of the culture media in papilloma acuminata—the favourite abode of the spirochæta refringens—and this condition he draws attention.

Two important questions arise from this discovery :—

1. Are the spirochætæ present in extra-genital cases of molluscum contagiosum ?

2. Can molluscum contagiosum be thus secondarily infected with the spirochæta pallida ?—WM. BARBOUR.

Case of Multiple Telangiectases. By J. H. Sequeira, M.D., F.R.C.P. (*British Journal of Dermatology*, May, 1913).—This patient was a married woman, aged 55 years, who was admitted to the London Hospital on 14th April, on account of recurring bleedings from a spot on the left index finger. On admission there were many telangiectases on both cheeks. The dilated vessels were not grouped in any particular pattern. In addition to the telangiectases there were many punctate spots on the cheeks, chin, and left eyebrow. On the dorsal and palmar aspects of the fingers there were numerous red punctate lesions of a similar character. The largest of these were slightly raised above the surface of the surrounding skin, and the size of a large pin's head. The tongue and mucous membrane of the lower lip and the uvula were somewhat similarly affected. There was no history of melæna. Nearly every morning for several years the patient had suffered from slight bleeding of the nose. The patient was somewhat stout and anæmic. There was no evidence of syphilis. A systolic hæmic murmur followed the first sound. The pulse was regular, 72 per minute. The blood-pressure was high, and the coagulation time of the blood was three minutes. The subcutaneous veins of the chest and abdominal wall were well marked, as were also the vessels around the ankles and the dorsum of the feet.

The etiology of this type of multiple telangiectases, he remarks, is obscure, and he gives Colcott Fox's classification into the following groups :—

1. Nævi, including the stellate nævi, and probably Hutchison's infective angioma.

2. Telangiectases, associated with various dermatoses, *e.g.*, acne rosacea, lupus erythematosus, localised sclerodermia, and after repeated applications of the x-rays. To this group he adds adenoma sebaceum, which the author of this paper would include in the group of nævi, and xerodermia pigmentosum, which, though congenital, has relations with x-ray dermatitis.

3. Telangiectases symptomatic of disturbances of the circulation, either of cardiac origin or associated with diseases of the lungs, liver, and spleen. In this group come the cases occurring in Grave's disease.

4. Essential or primary telangiectases, *i.e.*, those not depending directly upon the state of the circulatory system or upon any well defined dermatoses. Fox quotes Lanceplaine's divisions of these cases according to the patterning of the vascular dilatations, viz., as diffuse, or network, or in plaques. To Lanceplaine's groups Fox adds angiomata of the senile, the common lesions seen on the trunk in a large number of people between 40 and 50 years of age, especially men.

As a special and interesting variety of the essential telangiectases, there is the familial affection to which Sir William Osler called attention, and of which Parkes Weber collected all the published cases. The characters of this type are the familial tendency to recurrent epistaxis and multiple telangiectases of the skin and mucous membranes.

After a review of the cases of the primary telangiectases, the author finds that, with the exception of the familial group, the term essential or primary is rarely applicable. In most of the recorded cases there is some underlying condition, which, at any rate in part, accounts for the tendency to dilatation of the peripheral vessels; of these, arteriosclerosis and syphilis are the most frequent. Varicose veins are almost a constant phenomenon.

The lesions from which several recorded cases suffered were arteriosclerosis, syphilis (two cases), myocarditis and slight nephritis, chronic alcoholism, and chronic lead poisoning.

The case now described by him agrees in several particulars with those mentioned; the obesity of the patient, her anæmia, high blood-pressure, and the evidence of the thickening of the retinal vessels suggested chronic interstitial nephritis. Hypothetically, the author considers there would be two factors involved in the causation of the permanent dilatation of the capillaries, viz., the high blood-pressure and some obscure change in the vessel walls, probably of toxic origin.

In the character of the lesions the case now described resembles closely the manifestations seen in the familial type, but there was no history of heredity, though one of the patient's children suffered from epistaxis. There was no evidence of malignant disease, which is mentioned as being associated with the formation of telangiectases. In cancer the lesions are said to be of the senile angioma type, but the author thinks there is little evidence in support of this, and as these angiomata are of frequent occurrence in people of both sexes over 50, it is not unlikely that they would be rather frequent in the subjects of malignant disease, which is more common in persons of advancing years.—WM. BARBOUR.

DISEASES OF THE EYE.

Demonstration of Cases of, followed by Discussion on, Disease of Pituitary Body (*Proceedings of the Royal Society of Medicine*, Section of Neurology and Ophthalmology, May, 1913).—Cases were shown of various forms of pituitary disease. The largest group consisted of cases with temporal hemianopia of both eyes and enlarged sella turcica, discovered by skiagram. Some of these presented evidences of acromegaly, while in others such symptoms were awanting. In most of these cases loss of sexual power in the male, and cessation of menstruation in the female, are recorded. Tendency to adiposity is not marked unless the disease has commenced in earlier life. These cases are mainly due to loss of function in the posterior lobe, accompanied, if excessive action of the anterior lobe is present, by acromegaly. Although bi-temporal hemianopia is seen in most of the cases of this group, several had already complete atrophy of the optic nerve in one eye, and one or two had become blind in both eyes.

H. L. EASON reported two very interesting cases of the above nature, in which recovery of vision followed a continuous course of thyroid extract.

GORDON HOLMES showed a case of the above type with early acromegaly. Thyroid extract treatment produced reduction of weight and relief of headache.

N. BISHOP HARMAN'S two cases were also of this type. The first patient was able definitely to report loss of colour perception in the temporal field prior to complete hemianopia; while the second patient had occasional diplopia. Harman suggests an explanation based upon the diaphragm test, in which, during a slight lack of mental attention, diplopia occurs. Neither case improved under treatment.

Similar cases were demonstrated by THEODORE THOMPSON; T. GRAINGER STEWART and HERBERT PARSONS; S. A. KINNIER WILSON; T. GRAINGER STEWART and ELMORE BREWERTON; W. H. WILSON, whose patient had only very slight diminution of the visual field; and R. W. DOYNE, whose patient showed failure of the fields for colour before the failure of the white field.

Several cases of hypopituitarism—Frohlich's syndrome of dystrophia adiposa-genitalis—were exhibited. F. E. BATTEN brought a boy of 16 years, who began to grow fat a year earlier. The subcutaneous fat was very abundant, and presented female characteristics in its distribution. The penis and testicles were small and infantile in appearance. There was no development of hair or other secondary sexual characteristics. He was intelligent, but lethargic. The eyes were normal except for a slight confusion of colours. There was no enlargement of the sella turcica. He had marked tolerance for sugar, being able to take 300 grm. of glucose without glycosuria. Treatment failed to retard the condition.

Cecil Williams showed a similar case. This was a boy of the age of 13, in whom the symptoms began at the age of 9. He had the same excessive growth in height, with adiposity of the typus feminus. Like the other boy he had a marked lumbar lordosis. His extremities tended to be cold and blue; blood-pressure, 115 mm. Hg; genitals undeveloped; vision normal. The increased stature is ascribed to activity of the anterior lobe, while the adiposity is believed to be due to defect of the posterior lobe.

Gordon Holmes' second case was of the same type, but considerably older, being 21 years of age; and the vision was also affected. The right eye was quite blind, with optic nerve atrophy. The left eye had colour scotomata in the temporal half of the field. Skiagram gave a much enlarged sella turcica. There was an appearance of being younger than he was, an adiposity of the feminine type, and partial non-development of the sexual organs.

H. L. Eason's third patient was very similar to the above case. He was 27 years of age, and had typical bi-temporal hemianopia. There was drowsiness, imperfect sexual development, voice half broken and high pitched, cyanosis, and low blood-pressure. Acromegaly was absent. Treatment was without effect. With enlarged sella turcica he was described as a typical case of Fröhlich's syndrome.

F. J. Poynton presented a boy of 8 years, with precocious development, who began to grow at the end of the first year. The sexual organs were fully developed; vision was normal. The carpus showed advanced ossification. He was brought for diagnosis; and the author suggested that there could be no carcinoma of the suprarenal.

T. Grainger Stewart and R. Rutson James presented a patient of the Lorain type of pituitary tumour. She was aged 21, but looked like a girl at puberty. Both optic nerves presented the appearance of post-neuritic atrophy, and she was unable to see a light. She was drowsy, but intelligent when roused. There had been several "fits," and she had incontinence of urine. Blood-pressure, 118 mm. Hg. *Thermic reaction*: 2 c.c. of 5 per cent: anterior lobe induced a well-marked thermic reaction. *Sugar test*: patient vomited when given more than 150 grm.; no sugar in urine. This case was differentiated from the preceding group by the absence of adiposity, but had the small adult body with retarded sexual development pointing to failure of function of the anterior lobe.

James Collier showed a case of cerebellar ataxia, with symptoms of a (?) preceding hypophyseal lesion.

H. G. Turney presented a case of pituitary and (?) adrenal syndrome, of which he gave a full description, and discussed the etiology at length in the subsequent discussion, where he advanced the theory that the condition constituted a sexual gland syndrome. "The lesion is of the posterior lobe of the pituitary, and is one of hyperplasia, so far as its pressor constituents are concerned, of hypoplasia of the element which subserves the nutrition of the generative organs. That it is the failure of this latter element, and not of the one which superintends carbohydrate metabolism, that has brought about the state of obesity." The argument is very ingenious and interesting.

The discussion was opened by Professor Sir E. A. Schafer, who gave a full description of the anatomy and physiology of the pituitary gland. Subsequent speakers were J. Herbert Fisher, H. G. Turney, and A. P. Garrod.

Dr. William Hill gave a description of the operations devised for reaching the pituitary gland. While referring to the operations of Horsley, Cushing, and Krause, he advocated the nasal route, especially that known as the Killian-Hirsch method.

Mr. Graham, Dr. Langdon Browne, followed, and the discussion, which had occupied two evenings, was closed by RICHARDSON CROSS.

The papers should be read in the original, which contains many excellent photographs of patients, skiagrams, and illustrations of operative procedures.—W. B. INGLIS POLLOCK.

Books, Pamphlets, &c., Received.

The Bradshaw Lecture on the Diagnosis and Treatment of Incipient Pulmonary Tuberculosis, by David Bridge Lees, M.D.Cantab., F.R.C.P. Lond. London: H. K. Lewis. 1913. (5s. net.)

Chavasse's Advice to a Mother on the Management of Her Children, and on the Treatment on the Moment of some of their Illnesses and Accidents. Seventeenth authorised edition, rearranged and rewritten, by Thomas David Lister, M.D Lond. London: J. & A. Churchill. 1913. (1s. 6d. net.)

Book for Mothers on the Management of Children in Health and in Disease, by A. M. Usher. With Introduction by Francis B. Rutter, M.D., F.R.C.S. London: J. & A. Churchill. 1913. (1s. net.)

Diseases of the Heart and Aorta, by Arthur Douglass Hirschfelder, M.D. With an Introductory Note by Lewellys F. Barker, M.D., LL.D. With 344 illustrations by the author. Second edition. London: J. B. Lippincott Company. (25s. net.)

Contributions to Practical Medicine, by Sir James Sawyer. Fifth edition, with many revisions and additions. Birmingham: Cornish Bros. 1912.

The Students Handbook of Gynaecology, by George Ernest Herman, M.B., F.R.C.S.Lond., F.R.C.S.Eng. Second edition, revised by the author, with additions by R. Drummond Maxwell, M.D.Lond., F.R.C.S.Eng. With 6 coloured plates and 194 figures in the text. London: Cassell & Co., Limited. 1913. (7s. 6d. net.)

Muller's Serodiagnostic Methods. Authorised translation from the third German edition, by Ross C. Whitman, B.A., M.D. With 7 illustrations in text. London: J. B. Lippincott Company. 1913. (6s. net.)

Mechanical Treatment of Abdominal Hernia, by William Burton De Garmo, M.D. London: J. B. Lippincott Company. 1913. (6s. net.)

Erinnerungen und Betrachtungen, von Professor Dr. Heinrich Fritsch. Bonn: A. Marcus and E. Webers. 1913.

Obstetric Aphorisms for the use of Students commencing Midwifery Practice, by Joseph Griffiths Swayne, M.D. Eleventh edition, revised and edited by Walter Carless Swayne. London: J. & A. Churchill. 1913. (3s. 6d. net.)

Manual of Bacteriology, by Robert Muir, M.A., M.D., Sc.D., F.R.S., and James Ritchie, M.A., M.D., F.R.C.P.Ed. Sixth edition, with 192 illustrations in the text, and 6 coloured plates. London: Henry Frowde and Hodder & Stoughton. 1913. (10s. 6d. net.)

Diseases of the Ear, by Philip D. Kerrison, M.D. With 331 illustrations in text and 2 full pages in colour. London: J. B. Lippincott Company. (21s. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FIVE WEEKS ENDED 23RD AUGUST, 1913.

	WEEK ENDING				
	July 26.	Aug. 2.	Aug. 9.	Aug. 16.	Aug. 23.
Mean temperature,	56·9°	60·5°	55·8°	59·3°	53·9°
Mean range of temperature between highest and lowest,	19·5°	24·7°	15·8°	15·5	22·2°
Number of days on which rain fell,	2	0	1	1	3
Amount of rainfall, ins.	0·18	0·00	0·01	0·10	0·46
Deaths (corrected),	287	317	288	281	327
Death-rates,	14·7	16·2	14·7	14·4	16·7
Zymotic death-rates,	1·5	1·4	1·4	1·1	1·0
Pulmonary death-rates,	2·3	3·5	3·6	1·9	2·9
DEATHS—					
Under 1 year,	55	55	70	76	71
60 years and upwards,	67	81	53	60	66
DEATHS FROM—					
Small-pox,	...	...	...	...	...
Measles,	16	12	16	9	11
Scarlet fever,	3	1	...	...	2
Diphtheria,	...	3	2	5	5
Whooping-cough,	9	10	5	7	3
Enteric fever,	1	...	2	...	...
Cerebro-spinal fever,	1	1	...	...	...
Diarrhœa (under 2 years of age),	19	12	25	28	37
Bronchitis, pneumonia, and pleurisy,	33	41	43	24	36
CASES REPORTED—					
Small-pox,	...	...	...	...	...
Cerebro-spinal meningitis,	1	2	1	1	...
Diphtheria and membranous croup,	32	25	37	43	42
Erysipelas,	20	17	20	25	24
Scarlet fever,	67	54	58	76	75
Typhus fever,*	4	1	1	7	12
Enteric fever,	9	25	9	3	2
Phthisis,	33	39	47	36	47
Puerperal fever,	4	7	3	2	1
Measles,†	223	246	181	175	137

* Five of these cases proved not typhus. † Measles not notifiable.

SANITARY CHAMBERS,
GLASGOW, 28*th August*, 1913.

THE

GLASGOW MEDICAL JOURNAL.

No. IV. October, 1913.

ORIGINAL ARTICLES.

TUBERCULOSIS: RENAL AND VESICAL CYSTOSCOPIC APPEARANCES IN THE EARLY STAGES DEMONSTRATED BY THE PROJECTOSCOPE.[1]

By DAVID NEWMAN, M.D.,

Vice-President, Urological Section, Seventeenth International Congress of Medicine, London.

It is now generally admitted that tuberculosis starts by attacking one kidney, that spontaneous cure of a tuberculous kidney does not occur, and that the only hope of saving the life of the patient rests upon an early recognition of the disease and a speedy removal of the infected organ.

Upon physical signs we must rely. It is in the application of physical methods to the inquiry that the urologist has advanced this department of the healing art, and even very early in the course of the disease he has rendered the diagnosis mathematically exact. Symptoms are only danger signals.

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[1] Address, opening discussion on "Early Tuberculosis of the Urinary Tract" at joint meeting of Surgical and Urological Sections.

The subjective conditions which call for a minute physical examination are—

1. Polyuria and frequent micturition at first without pain.

2. Persistent slight pyuria and albuminuria in acid urine, without tube-casts.

3. Occasional hæmaturia, with comma-shaped clots in the urine.

4. Remission of the above symptoms for longer or shorter periods.

Later, pain is experienced in the loin over a small area, but is at first easily relieved by warm applications. There may be difficulty in micturition, meatal pain is complained of during the act, the urine is pale and of low specific gravity, and contains a slight deposit of mucus, pus, and tubercle bacilli.

The most characteristic feature of the symptoms is their tendency to remission. In this lies a serious danger: the patient and the medical attendant may be led astray by the hope that all is well. The patient gains in weight, appears in good health, the temperature is not disturbed, the polyuria and frequent micturition are no longer present, and no blood can be found in the urine. But this does not last long; they all return again with fresh vigour. When this happens an exhaustive examination is demanded. As I have said elsewhere, "In all cases of transient and slight albuminuria, hæmaturia, and pyuria associated with acid reaction in the urine, occurring in young persons, a careful inquiry should at once be made to clearly demonstrate the cause of these symptoms. To allow time to pass in the hope that the warning may be neglected is folly. These are the distant danger-signals of renal tuberculosis: wait not till the home-signals are in full view; they may appear sooner than you expect: then it may be too late to avoid disaster."

The objective methods employed are—

1. Physical examination of the abdomen, and of the ureters *per rectum.*

2. Bacteriological examination of the urine; inoculation experiments, and ophthalmo-tuberculin reaction.

3. Segregation of the urine.

4. Cystoscopy.

All these methods come within the domain of the general practitioner with the exception of the last mentioned. It requires the experience and skill of the expert, from whom very precise information may be obtained, not only with reference to the presence of urinary tuberculosis, but also as to the extent and locality of the lesion.

While limited to the parenchyma of the kidney, on account of its insensitiveness to pain, the disease unfortunately does not give rise to any serious discomfort, and often the tenderness in the lumbar region on superficial and deep pressure is due to muscular rigidity or a cutaneous sensory reflex. It is when the mucous membrane of the pelvis becomes involved that pain is conspicuous. The absence of the great danger-signal, pain, is here a misfortune: less prominent symptoms are liable to be looked upon as not significant, and unless the medical attendant is on his guard the disease may be permitted to advance undiscovered. The premonitory symptoms of tuberculosis may appear long before the development of a gross renal lesion such as gives rise to enough enlargement of the kidney to be detected by palpation.

It is during this stage, when surgical treatment can be most successfully employed, that cystoscopy steps in and offers a most valuable aid to diagnosis in both renal and vesical lesions, but more especially in the former.

Writing on this subject many years ago[1] I observed, "It must be admitted that in many instances a considerable time is permitted to elapse between the primary renal tuberculosis and the invasion of other parts. It is by making an early diagnosis, and by taking advantage of this interval, that the surgeon can hope to save or prolong the life of his patient."

During the time that elapses between the onset of the disease in the kidney and the invasion of other parts the surgeon can interpose with advantage. The most favourable cases for operation are those in which, from the very circumstances of the case, the diagnosis is difficult and the prognosis uncertain. Surgical treatment is, therefore, often not asked for until the disease is advanced, or it is even postponed to a time when serious complications have set in.

Unfortunately, when a patient is not suffering much actual pain or serious inconvenience it is difficult to convince him of the seriousness of his condition, but in all cases of primary renal tuberculosis the problem must be seriously placed before him, and nephrectomy advised.

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[1] *Surgical Diseases of the Kidney*, Longmans, p. 298.

I. Cystoscopic Appearances in Early Renal Tuberculosis.

When a kidney is tuberculous the orifice of the corresponding ureter indicates clearly the nature of the lesion, and this happens in several ways; by changes in the colour and contour of the lips of the orifice; by the size, frequency, and regularity of the "shoots"; and by the character of the urine which escapes.

From ocular inspection, if carefully carried out by an educated eye, exact conclusions may be drawn which cannot be arrived at by other means, and the course of treatment can be decided upon early in the course of the disease. By so employing this method most valuable time may be utilised, which would otherwise be wasted, waiting for other evidence to prove the nature of the renal lesion. Too often when we wait until the subjective symptoms are sufficiently significant to form a basis for diagnosis the disease had advanced beyond our power to remedy.

I agree with Fenwick and Meyer when they assert that the appearances of the ureteral orifices are so characteristic that they act as a reliable guide, not only as to the nature of the disease, but also as to the existence of tuberculosis of the kidney on the side on which they are found.

Experience has led me to the following conclusions in cases of primary renal tuberculosis:—(1) When the orifice of the ureter is strictly normal no serious disease exists in the corresponding kidney; (2) when the kidney is normal the orifice of the ureter is also normal; (3) when there is evidence of tuberculosis at the orifice of the ureter there is always associated with it tuberculosis of the corresponding kidney; (4) in tuberculosis of the bladder the ureter does not become involved if the corresponding kidney is free from disease.

To state the position briefly from the clinical standpoint, I may say in respect to early renal tuberculosis:—(*a*) When one ureteral orifice is altered while the other is normal, the renal lesion is on the side of the morbid ureter; (*b*) the deformity of the orifice and the lesions there indicate the nature of the renal disease; (*c*) the character of the urine escaping from the ureter denotes the morbid changes taking place in the corresponding kidney; (*d*) the frequency, size, and regularity of the "shoots" from the two orifices indicate the functional activity or the presence of undue irritation in the respective kidneys.

The first axiom is not yet sufficiently recognised, so that it is still necessary for me to say what I can to enforce it, now many years after I first called attention to the importance of studying the appearances of the orifices of the ureter in renal disease. At first little heed was given to the subject, but now urological surgeons are coming to appreciate the significance of this sign of disease. In 1902 I wrote: "When there is distinct evidence of irritation of the orifice of one ureter, while the other is normal in appearance, it may be safely inferred that the renal lesion is, if unilateral, on the side of the morbid ureter."[1] The more I have studied the subject the more convinced am I of the value of this observation.

In most of the following cases the "shoots" were different in size and frequency on the diseased side from what they were on the side of the normal kidney, and also the urine escaping contained either pus or blood.

In early tuberculosis the lesions at the orifices vary somewhat, but they always show some deformity or distortion of the mouth, and usually thickening or retraction of one or of both lips. The following illustrations show clearly the changes referred to, and all are taken from cases of primary renal tuberculosis without any involvement of the bladder, or tuberculous lesion elsewhere as far as could be discovered. Indeed, in several, it was only by reason of the changes in the ureteral mouths that the renal lesion was in the first instance suspected.

SHORT EPITOME OF CASES AND DESCRIPTION OF MORBID CYSTOSCOPIC APPEARANCES.

CASE I.—Tuberculous focus in upper pole of left kidney. History of frequent micturition and polyuria for eighteen months: twice, hæmaturia and transient albuminuria in acid urine: no pyuria: no shadow with x-rays, and no deposit in urine; no tubercle bacilli; no pain in either renal region, but some tenderness on pressure over the left kidney, and evidence of slight enlargement. The bladder was normal with the exception of the orifice of the left ureter (Fig. 1), which was crescent-shaped: the floor was of a bright red colour, and the lips were thin and very sharp. From the left ureter the intervals of the "shoots" were from thirteen to twenty-two seconds; the "shoots" were usually small but sometimes very frequent and rapid, and the urine which escaped was clear. From the right ureter the "shoots" escaped regularly every twenty-five seconds, and the flow occupied about two seconds.

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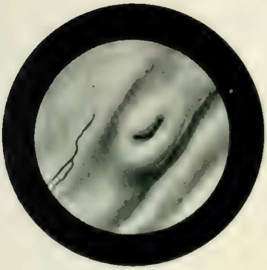
[1] *The Diagnosis of Diseases of the Kidney amenable to Surgical Treatment*, 1902, p. 26.

Two months after the cystoscopic examination a third hæmaturia occurred, more copious than the former bleedings, and was followed by a slight pyuria. An inoculation made at this time caused death of the guinea-pig from tuberculosis in three weeks. Nephrectomy-cure. Well in January, 1908, four years after operation.

CASE II.—Early tuberculosis of left kidney and pelvis in a female, aged 27. Frequent micturition without pain for over eight months. The urine contained a trace of albumen, but no deposit. The frequency of micturition increased, and was associated with marked discomfort, after which sudden improvement set in. No organisms could be discovered in the urine, and inoculations gave negative results. A cystoscopic examination (Fig. 2) showed the mucous membrane of the bladder, in the neighbourhood of the orifice of the left ureter, to be congested and swollen, while the mouth was dilated and elongated, and the inner or right lip was occupied by a distinctly nodulated swelling. The nodules were small, pale in their most prominent parts, and looked like small caseous bodies covered with congested mucous membrane. At the lower angle of the orifice the hyperæmia was very marked, otherwise the bladder was normal. The "shoots" were small and irregular, but the urine was clear from the left ureter; from the right the shoots were normal. No pyuria; no pain in renal region or tenderness on pressure, but slight increase in resistance over left kidney was made out. Pus was first noticed in small quantities later, and when inoculations were made two in five gave positive results. The *x*-rays gave no shadow. Exploration of the kidney was advised, but the operation was declined by the patient.

CASE III.—Primary tuberculosis of left kidney in a male, aged 27. Suffered from frequent micturition, polyuria, and hæmaturia; urine clear in colour; specific gravity, 1008; acid, and did not throw down a deposit. He was tall, thin, anæmic, and was very anxious about his condition since he first noticed the urine blood-stained. Micturition was not only frequent but also painful, so that he was very desirous



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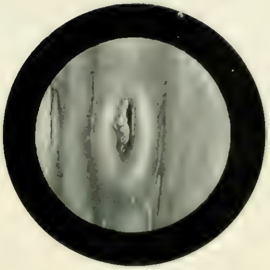

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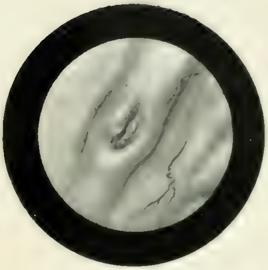

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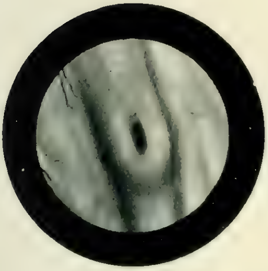

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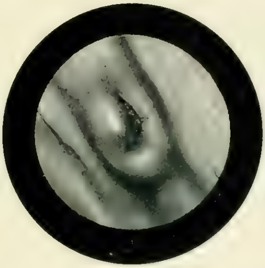

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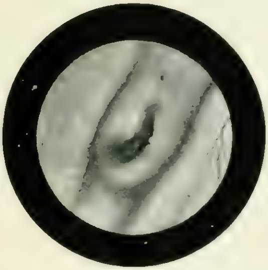

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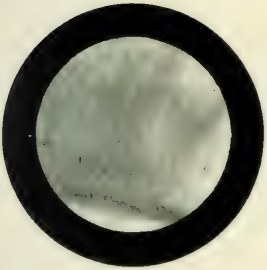

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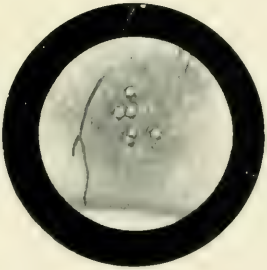

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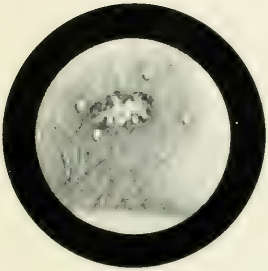

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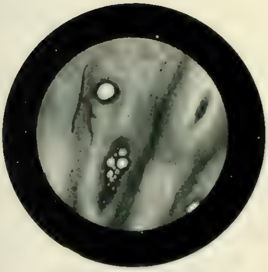

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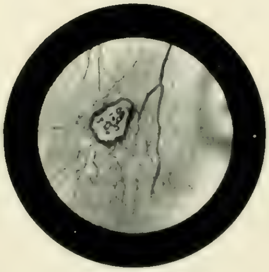

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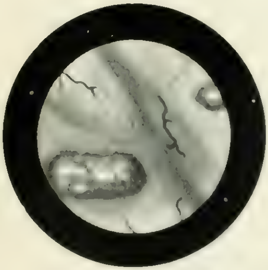

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To illustrate Dr. Newman's communication.

to have relief. No pain in the renal region; very slight enlargement of the left kidney. The urine contained a trace of blood, and pus and tubercle bacilli.

Cystoscopic examination showed the bladder to be free from disease (Fig. 3), with the exception of the orifice of the left ureter, which was unduly prominent, the opening being enlarged, while on both lips there were small pale nodular projections, but no ulceration was seen. The "shoots" from the left ureter were small in amount but regular in rhythm, and were slightly purulent. From the right ureter the "shoots" were large, and the urine escaping was clear. There was no evidence of tuberculosis elsewhere. The conclusion come to was that the left kidney was tuberculous. It was excised, and found to contain three tuberculous foci. The patient made a good recovery, and reported himself well two years after.

CASE IV.—Tuberculosis of right kidney in early stage in a female, aged 31. Sudden pyuria thought to be due to cystitis. The bladder found to be normal, but the right ureteral opening was distorted (Fig. 4) and gaping. The mouth presented a sigmoid form: the floor was deeply injected, and the lips had lost their sharp outline. The ridge of the trigone was unduly marked; the left ureter was normal. The "shoots" from the right ureter were purulent, small in amount, and irregular in rhythm, the intervals sometimes being fifteen seconds, at other times eighty or ninety seconds. The left ureteral opening was normal. Tubercle bacilli were found on inoculation, but not in the deposit, by the microscope. No enlargement of the kidney could be made out, or tuberculous lesions discovered elsewhere. The patient refused operation.

Tuberculin treatment was adopted, and carefully carried out for two and a half years. After thirteen months' treatment no tubercle bacilli were found in the urine, the pyuria disappeared, and the vesical irritation ceased. But I fear we cannot claim this as a cure.

CASE V.—Primary tuberculosis of the right kidney in a female, aged 19. A profuse hæmaturia thought to be due to a fall on a stair. The bleeding not accompanied by any pain in the renal regions or in the bladder: the urine contained no abnormal constituent beyond blood corpuscles. During a bleeding the blood was seen to flow from the right ureter only. No tubercle bacilli were present. No pain in the lumbar region, and no distinct swelling over the right kidney. A fourth bleeding from the right ureter, and some erosion of the lips of the opening: the floor was deeply injected, and the mouth was enlarged and sickle-shaped, and both angles were very pointed (Fig. 5). The "shoots" were regular, the orifice remained fixed and did not dilate or contract: bladder normal. Later the right kidney was distinctly enlarged, and for the first time tubercle bacilli were found in the urine. There was no pyuria. The patient did not complain of any pain, but her general health was deteriorating rapidly. An exploration of the kidney was advised, but declined.

CASE VI.—Early tuberculosis of left kidney in a male, aged 31. Sudden, frequent, and painful micturition, and slight albuminuria, which lasted for six weeks and returned ten months later, and associated with acid urine and slight pyuria, without tubercle bacilli: nothing abnormal in the bladder or orifices of the ureters. Lasted for ten days only. Third attack occurred three months later, and the quantity of pus was greater, but still small and variable in amount. Tubercle bacilli discovered for the first time, also pain over the left kidney, with slight enlargement. Bladder normal, with the exception that around the orifice of the left ureter (Fig. 6) the mucous membrane was congested, the opening elongated, slightly crescent-shaped, and the floor and outer lip eroded, while the inner lip was sharp and very clearly defined. The "shoots" were purulent, and very frequent in number. The kidney was removed, and was found to contain two moderate-sized tuberculous foci. The patient made an excellent recovery.

II. THE CYSTOSCOPIC APPEARANCES IN EARLY VESICAL TUBERCULOSIS.

I have had the opportunity of watching the very early progress of tuberculosis disease from a time before any characteristic disease could be discovered in the bladder until ulceration set in.

The first feature was marked anæmia of the mucous membrane, a change so often seen in the mucous membrane of other surfaces, for example in the larynx and pharynx. In early vesical tuberculosis following the stage of simple anæmia the vessels ramifying in the mucous membrane are often obscured, and the cystoscopic field is ill-defined, probably due to œdema of the mucous membrane (Fig. 7).

The surface may be unduly pale elsewhere than in the immediate neighbourhood of the tuberculous infiltration.

The next change observed is hyperæmia, due to dilatation of the arterioles supplying the floor and the neck of the bladder, followed by proliferation of connective tissue cells. This leads to the appearance of minute nodules, which are at first clear, like boiled sago grains beneath the epithelium of the mucous membrane (Fig. 8). These during the earlier stage are scattered, but they soon become confluent. At the same time, by becoming opaque, they evince signs of caseous degeneration, while the blood-vessels around the little nodules become more and more engorged, forming bright red rings enclosing pale, chalky-looking, elevated nodules (Fig. 9). The deposit may be in the form of short bands or in irregular patches, which are generally covered by thin pale flecks of mucus or shreds of necrosed mucous membrane. When these are removed by washing, an irregularly eroded surface is seen surrounded by a zone of hyperæmia. Two or three ulcers are generally found in the same bladder when this stage is reached, and, adjacent to the ulcers, miliary tubercles are generally seen. Several small ulcers may occupy the floor of the bladder, situated within the area of the trigone, the surfaces being covered by yellow slough, while the margins are deeply injected (Fig. 10).

The ulcer may involve the submucosa, and completely expose the muscular coat, forming the "trabeculated ulcer" (Fig. 11).

Figs. 7, 8, 9, and 11 represent the same lesion at different stages in the same case, while Fig. 10 shows several small ulcers at the floor of the bladder, covered by sloughs, and Fig. 12 shows several submucous caseous deposits, elongated oval in shape, on the right side of the trigone. The whole of the mucous membrane of the bladder was deeply injected.

The bladder offers considerable resistance to the attack of tubercle bacillus, even when the mucous membrane is injured, as shown by experiments. Rovsing has demonstrated that tubercle bacilli, injected into the bladder and allowed to remain, often fail to produce a lesion. This explains how it is that in many cases of tuberculous nephritis the bladder remains healthy. But if other pyogenic organisms, and especially those which decompose urea, are present, the resisting power of the mucous membrane is greatly weakened, and secondary infection is almost certain to occur.

OBSTRUCTION OF THE PULMONARY ARTERY DUE TO CARCINOMA.

BY ARCHIBALD W. HARRINGTON, M.D.,
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THE patient in whom this interesting lesion occurred was the subject of multiple carcinomatous growths on the surface of the body, probably secondary to a scirrhous carcinoma of the left breast. Such cases are not very uncommon, the spread in many being probably a centrifugal lymphatic one. They are well illustrated in the books of Sampson Handley and Marmaduke Sheild. A case secondary to carcinoma of the stomach has been described by Professor D. W. Finlay. In the present case there were no metastases in the bone-marrow; and the changes in the blood suggestive of such metastases (which have been described in cases already published by myself along with Professor Teacher and Dr. Alex. M. Kennedy) were absent. The feature of greatest interest in the case was the compression of the left pulmonary artery by a carcinomatous mass, an occurrence which must be very unusual.

The patient, a woman of 46 years, was admitted to the Glasgow Royal Infirmary on 2nd January, 1911. She had been subject to gastric attacks of slight severity most of her life, and to bilious headache for about a year. Apart from these, she considered herself in good health until about three months before admission. At that time she began to suffer from headaches and from pain in the right back and side. She gradually lost flesh and colour, and became weak and short of breath. The pains subsided, and by the time of admission troubled her but little. About two months prior to admission subcutaneous nodules made their appearance. They appeared first of all on the right shoulder, then on the chest, next on the abdomen and fore-arm, and lastly on the left breast. She thought they were all rather less in size, especially the abdominal ones, and all were less painful, but this was very doubtful.

On admission the patient was notably pale and emaciated, the ribs showing distinctly on the chest wall. There was very little subcutaneous fat, the muscles were small and soft, and there were no enlarged glands or œdema. Numerous subcutaneous tumours were present. On the abdominal wall were three distinctly hard and slightly tender tumours, entirely in relation to the skin and subcutaneous tissues. Four nodules were present on the chest and one on the left mamma. Each was hard and tender, and the overlying skin was reddened and adherent. One was present on the anterior axillary wall, and was adherent to the deeper structures; another was over the right sterno-mastoid muscle about its middle. There were four on the right arm, one on the fore-arm, and two on the posterior axillary wall. Six were present on the back.

The nodules were small, varying in size from a pea to a half walnut. They were evidently subcutaneous in origin. The growth, however, infiltrated the skin, which became tense and of purple colour. The viscera, with the exception of the heart, appeared to be normal. Pulsation could be seen and felt in the fourth and fifth interspaces within the nipple line. The area of cardiac dulness was normal. A systolic murmur was audible all over the cardiac area. It was somewhat rough, running out of the first sound, and was loudest in front beneath the left clavicle. It was well conducted towards the left clavicle, and was still louder in the left supraspinous and infraspinous fossæ, attaining its maximum in the latter site. The second pulmonic sound was distinct. The lungs appeared to be normal, but skiagrams showed a shadow running up from the superior border of the heart, behind and to the left of the sternum. More tumours appeared, and the original ones steadily grew larger, but no ulceration occurred.

One nodule was excised, and on examination by Dr. A. M. Kennedy, proved to be a scirrhous carcinoma. The patient gradually grew weaker and more emaciated. The pulse, which on admission was quite regular, continued so until 3rd February, 1911, when it became irregular. Auricular fibrillation began on 5th February, and continued until death. The murmur remained the same throughout, and was best heard beneath the left clavicle and in the left infraspinous fossa.

Post-mortem examination (by Professor John H. Teacher).—Besides the subcutaneous nodules noted, the axillary and supraclavicular glands on both sides were involved. There was a large mediastinal mass and several masses in the abdomen. The glands in the groin were not involved. One of the abdominal masses occupied the left suprarenal region, another was close to the right kidney, a third was in the tail of the pancreas, and there was a large mass in the root of the mesentery close to the duodenum. Related to this by a chain of nodules there was an external tumour of the intestine. almost encircling it, and situated about a foot below the end of the duodenum. Four inches lower there was a second mass of the same type. The larger mass was on the free surface of the bowel, but extending to the mesenteric attachment: the smaller was at the mesenteric attachment. Some dilated lymphatics and one small nodule were present in the mesentery. There were two nodules in the spleen. The bone-marrow from the sternum and from a rib was normal.

Thorax.—There were a few adhesions of the left pleura. One of these was situated immediately below the scirrhous tumour in the left mamma, but there was no tumour in the lung itself. The lungs showed some atrophy. A large branched thrombus filled almost the whole pulmonary artery. The end of it was found filling the right pulmonary artery back to its origin from the main trunk. There was very little change in the lung beyond a general engorgement. actual infarction not having been produced.

The cardiac valves were all normal. There was a large tumour mass behind the pulmonary artery and aorta. It had penetrated the pericardium all round the junction of that sac with the pulmonary artery. and also about the emergence of the aorta. There were nodules on the anterior aspect of the superior vena cava. The tumour also appeared in the floor of the trachea about the bifurcation. The left pulmonary artery was nipped and distinctly narrowed about 3 cm. above the valve by this glandular mass. The length of the stricture was a little over 2 inches. and the diameter at the narrowest part was quarter of an inch. The narrowing seemed to diminish the lumen by nearly one-half. The intima of the vessel was intact. The cavities of the heart. especially on the right side. were rather distended with red gelatinous clot.

Liver was of marked "nutmeg" character. One tumour was present in the right lobe near the falx.

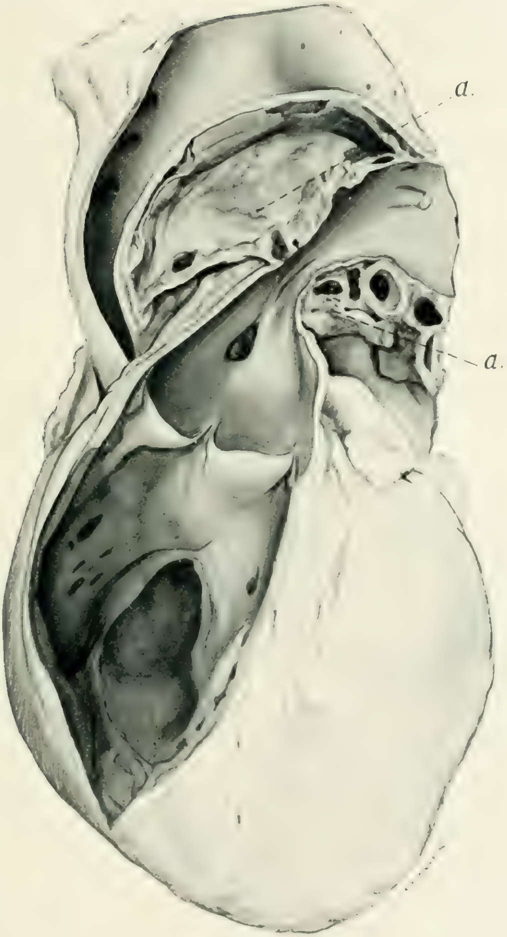
Spleen showed marked venous congestion and two small nodules.

Uterus. ovaries. kidneys, and *thyroid* were normal.

Stomach and bowel showed no tumours.

Brain showed some œdema of the meninges.

The primary tumour was probably the large nodule at the left breast. Microscopically. this proved to be a characteristic scirrhus of the mamma of somewhat cellular type. The



a. a. Tumour.

To illustrate Dr. Harrington's communication.

nodules in the spleen and liver were somewhat different. They showed in places a very definite adenomatous arrangement, closely resembling that seen in carcinoma of the stomach.

Obstruction of the pulmonary artery as it occurred in the present case must be rare. The murmur in this case was suggestive of pulmonary stenosis, but differed in its site of maximum intensity and conduction. Pulmonic murmurs are usually best heard in the third left interspace, are conducted towards the clavicle, and are not as a rule of wide distribution. In the case under consideration the murmur was much louder beneath the left clavicle away from the pulmonic area, and it attained its maximum loudness over the left scapula in the infraspinous fossa. These facts indicated that the stenosis was situated some distance away from the pulmonic valve and the front of the chest. As has been detailed, this diagnosis was fully verified at the autopsy.

I am greatly indebted to Dr. John Cowan for permission to publish this case, and for the use of the illustration.

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NOTES ON THE SERUM TREATMENT OF CEREBRO-SPINAL MENINGITIS.

By WILLIAM C. GUNN, M.D.,
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During the past few years cerebro-spinal meningitis has become more and more rare in Glasgow, and the number of cases admitted annually to Ruchill Hospital has been comparatively small. Within the last two years, for instance, it has been exceptional to find a convalescent and an acute case in the hospital together. In consequence, the treatment of the disease first recommended by Mackenzie and Martin has been modified. The following notes are a record of eleven cases, eight of which were meningococcic in nature and three pneumococcic. Mackenzie and Martin,[1] during the epidemic period of cerebro-spinal meningitis in Glasgow, made extensive observations on the cerebro-spinal fluid and serum of cases of this disease. They found that the former was practically devoid of complement and bactericidal substances, but that the latter in convalescent cases possessed strong bactericidal properties. This was also observed to a less well-marked degree in the normal human serum, and in that of cases acutely ill from the disease.

Similar results regarding complement in the cerebro-spinal fluid of patients who have come under observation during the present post-epidemic period have been obtained by the writer. For example, 2 c.c. of the cerebro-spinal fluid from Case V, to be described, only produced slight hæmolysis of 1 c.c. of sensitised ox-corpuscles. Similar observations were made in other cases. As a result of their investigations, Mackenzie and Martin adopted the treatment of epidemic cerebro-spinal meningitis with intraspinous injections of the serum of patients recently convalescent from this disease. Other patients were similarly treated with their own serum, and both methods were successful. As already mentioned, the facilities for these methods of treatment do not exist at present, owing, firstly, to the fact that a convalescent patient is rarely in hospital along with an acute case; and, secondly, to the age of some of the patients, which makes bleeding to a sufficient extent quite impracticable.

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[1] *Journal of Pathology and Bacteriology*, 1908, vol. xii, p. 539.

The anti-meningococcic serum of Flexner has been used in four cases, and the polyvalent anti-meningococcic serum issued from the Lister Institute by Allen and Hanburys in three. One other chronic case was treated with his own serum. On account of the absence of complement from cerebro-spinal fluid, the anti-meningococcic serum was re-activated at the time of each injection by the addition to it of fresh normal human serum, a healthy individual always being selected to supply the latter. Of the four cases treated with Flexner's serum, obtained from New York, three recovered and one died. The three cases, all of the chronic type, treated with the Lister Institute serum died. The patient treated with his own serum, also a chronic case, recovered after a prolonged illness. It may be noted here, although a record is also given along with the summary of the clinical reports of the cases, that owing to the absence of progress made in three of the fatal cases, fresh guinea-pigs' serum was substituted for the human serum without making any apparent difference, though no ill effects from the injections were observed.

Technique.—Ten cubic centimetres of blood were withdrawn from the median basilic vein of a healthy individual and allowed to stand for a few hours until the serum had separated. This quantity of blood yielded about 5 c.c. of serum in four hours: separation was hastened in some instances by placing the blood in an incubator at 37° C.

The serum was then added to the amount of anti-meningococcic serum which was to be injected. The dosage varied with the age of the patient. Lumbar puncture was then performed, and a quantity of cerebro-spinal fluid, a little in excess of the volume of the serum to be injected, removed.

The subdural injections were always performed with the patient under a general anæsthetic, but not deeply so. The serum was heated to 98° F. before being injected. The injection was made slowly, and, after its completion, the foot of the patient's bed was elevated for an hour to allow the serum to gravitate throughout the cerebro-spinal system.

Severe headache and backache were complained of in some cases, and practically all of them were restless for some hours afterwards. The breathing was sometimes shallow for a short time, but no other untoward results were noted. The injections were repeated at intervals of one, two, three, or four days, and sometimes longer, depending upon the stage of the disease, the characters of the cerebro-spinal fluid, and the clinical appearances of the patients. The quantity of the growth of the meningococcus, obtained from a loopful of the deposit yielded by centrifugalising 10 c.c. of the cerebro-spinal fluid, was also taken as an index of the progress of the patient, and as a guide to the frequency of the injections. As the fluid cleared and the colonies became more scanty the interval between the injections was lengthened. In favourable cases two or three doses sufficed.

In the record of Case IV a complete account is given of the treatment by the patient's own serum. This was a chronic case, and the recovery is all the more worthy of note. The diagnosis in all these cases was confirmed by the presence of the meningococcus in the cerebro-spinal fluid and by cultures made from the latter on serum agar, the latter being prepared by smearing the surface of an agar slope with a few drops of fresh human serum which had been heated to 57° C. for one hour.

Three cases of pneumococcic meningitis were treated on the same principle as the other cases. Two died, and the third recovered. Anti-pneumococcic serum combined with fresh complement was used in these cases. The method adopted will be described with each case.

The following is a table of the cases of meningococcic meningitis treated :—

Meningococcic meningitis.—

Case.	Age.	Type of Case and Period of Fever.	Result.
I.*	6½ years.	Acute, 14 days.	Complete recovery.
II.*	5 ,,	,, 7 ,,	Recovery—totally deaf.
III.*	8 months.	,, 14 ,,	Complete recovery.
IV.†	15 years.	Chronic, 45 ,,	,, ,,
V.‡	5 months.	,, 14 ,,	Death.
VI.‡	6 years.	,, 23 ,,	,,
VII.‡	8 months.	,, 44 ,,	,,
VIII.‡	2 years.	,, 28 ,,	,,

* Treated with Flexner's serum.
† Treated with his own serum.
‡ Treated with Allen & Hanburys' (Lister Institute) anti-meningococcic serum.

SUMMARY OF THE CLINICAL REPORTS ON THE CASES OF CEREBRO-SPINAL MENINGITIS.

CASE I.—H. M‘A., aged 6½ years, admitted on the fifth day of illness. Onset with severe headache and vomiting. Delirium on the second day of illness. Symptoms typical; squint; retraction of head; rigidity of limbs; and hypersensitiveness of skin; petechiæ over the body; herpes on the back of the hand; deafness between the eighth and twelfth days. Cerebro-spinal fluid turbid; meningococci abundant; many of the organisms extracellular; exudate polymorphonuclear. The temperature varied between 101° F. and 104° F. until the eleventh day of illness, and reached normal by crisis on the twelfth. It afterwards varied between normal and 99° F. until the thirtieth day of illness. The patient made a complete recovery.

Treatment.—

15 c.c. Flexner's serum + 5 c.c. fresh human serum on 6th day.
25 c.c. ,, + 5 c.c. ,, ,, 9th ,,
25 c.c. ,, + 5 c.c. ,, ,, 12th ,,

CASE II.—B. R., aged 5 years, admitted on the sixth day of illness. Onset with sickness and vomiting, and pain in the head and back. Symptoms of meningitis typical; retraction of head; rigidity of muscles of neck; well-marked Kernig's sign; squint; reaction of pupils normal.

Cerebro-spinal fluid turbid; meningococci present, chiefly intracellular; exudate polymorphonuclear with many lymphocytes. On the eighth day the fluid was opalescent, and only a fine cobweb coagulum separated out from it. Several films were stained for tubercle bacilli, and in one a few acid-fast organisms with the morphological characters of tubercle bacilli were observed.

On the twelfth day the cerebro-spinal fluid was still opalescent, and the exudate almost entirely lymphocytic. No organisms could be found. A guinea-pig, which was inoculated with 2 c.c. of this specimen, showed no evidence of tubercular disease four weeks later. The patient recovered but was quite deaf.

Treatment.—

15 c.c. Flexner's serum + 5 c.c. fresh human serum on 7th day.
15 c.c. ,, + 5 c.c. ,, ,, 10th ,,
15 c.c. ,, + 5 c.c. ,, ,, 12th ,,

CASE III.—M. S., aged 8 months, admitted to hospital on the thirteenth day of illness. Illness began with vomiting. Symptoms of meningitis fairly typical; head a little retracted: knees drawn up: Kernig's sign present: cerebro-spinal fluid opalescent: exudate polymorphonuclear: large number of lymphocytes also present: meningococci abundant.

The fever in this case ended by crisis on the fourteenth day of illness, and the symptoms of meningitis disappeared by the twentieth day. The child recovered completely.

Treatment.—

15 c.c. Flexner's serum + 4 c.c. fresh human serum on 13th day.
15 c.c. ,, + 4 c.c. ,, ,, 16th ,,
15 c.c. ,, + 4 c.c. ,, ,, 19th ,,

CASE IV.—A. M'G., aged 15½ years: patient admitted to hospital on the tenth day of illness. Symptoms and signs of cerebro-spinal meningitis typical. Meningococci present in the cerebro-spinal fluid. Fever varied between 100° F. and 103° F. until the thirtieth day of illness, and during this period the patient emaciated to an extreme degree without abatement of the meningitis. The cerebro-spinal fluid at the end of this time was turbid, and meningococci, though scanty, were present.

The patient came under the writer's observation at this time. Previously to this no serum treatment had been adopted. On the thirty-third day venesection was performed, and 70 c.c. of blood obtained: 20 c.c. of the serum from this were injected subdurally next day, and the remainder (15 c.c.) on the thirty-second day. Considerable improvement was observed a few days afterwards. Venesection was repeated on the forty-second day, and 20 c.c. of serum obtained from the blood were injected subdurally next day. The patient continued to improve until the sixty-fifth day, when he had what appeared to be a recrudescence of the meningitis, although the cerebro-spinal fluid remained clear. This lasted for ten days. It was never severe, and no further serum treatment was adopted. The patient ultimately recovered completely, without showing any sequelæ.

CASE V.—F. M'L., aged 5 months, admitted to hospital on the fifth day of illness. Very poorly nourished, only weighing about 7 lb. Symptoms of meningitis typical. Cerebro-spinal fluid turbid: abundant meningococci present: exudate chiefly polymorphonuclear. The illness lasted thirty days, when death occurred. The temperature varied between normal and 102° F. until the twenty-third day. Hydrocephalus developed during the course of the illness, and this was the cause of death. At this time the child only weighed 6 lb.

Treatment.—

4 c.c.	Flexner's serum	+ 2 c.c.	fresh human	serum on	5th	day.
12 c.c.	,,	+ 3 c.c.	,,	,,	9th	,,
15 c.c.	,,	+ 3 c.c.	,,	,,	11th	,,
12 c.c.	,,	+ 4 c.c.	,,	,,	15th	,,
12 c.c.	,,	+ 3 c.c.	,,	,,	19th	,,
12 c.c.	,,	+ 4 c.c.	,,	,,	25th	,,

Lumbar puncture was performed frequently to relieve the intra-cranial pressure, but the effect was only of short duration.

As the disease advanced the cerebro-spinal fluid was observed to become gradually less turbid, and the organisms much reduced in number, as judged from the appearance of films and the number of colonies grown on serum agar, although at no time were they completely absent.

Post-mortem examination.—Lateral ventricles very much dilated; thick green pus in the right; convolutions of the brain markedly flattened; base of brain and cord covered with thick inflammatory exudate. The right kidney showed extensive necrosis of the cortex. The necrotic areas were yellow and opaque, with considerable congestion at the margins. Thrombi were found in some of the renal vessels, a condition which appeared to be marantic in origin.

CASE VI.—A. M‘O., aged 6 years, admitted to hospital on the sixth day of illness. Symptoms of meningitis typical: head markedly retracted: rigidity of muscles of neck, back, and legs: skin hypersensitive: right ear covered with an herpetic eruption: respirations shallow and quiet: Kernig's sign present to a marked degree: cerebro-spinal fluid turbid. A considerable fibrinous coagulum separated out after fluid had stood for an hour: exudate polymorphonuclear: meningococci abundant. Hydrocephalus developed about the thirtieth day. Death occurred on the fortieth day. The temperature varied considerably during the whole period of illness.

Treatment.—Subdural injections of 20 c.c. of anti-meningococcic serum (Allen & Hanburys', Lister Institute), plus 4 c.c. fresh human serum on the sixth, eighth, tenth, and thirteenth days, without effect. Similar injections were repeated on the nineteenth and thirty-first days, with 4 c.c. of fresh guinea-pig's serum substituted for human serum, also without effect.

No *post-mortem* examination was made.

CASE VII.—G. B., aged 8 months, a well-nourished child, admitted on tenth day of illness. Frequent convulsions: symptoms of meningitis fairly typical: cerebro-spinal fluid opalescent; meningococci abundant, chiefly extra-cellular. Condition steadily grew worse, and death occurred on the forty-fourth day. Temperature fluctuated between normal and 104° F. during the illness.

Treatment.—Subdural injections of 10 c.c. of anti-meningococcic serum (Allen & Hanburys', Lister Institute), plus 4 c.c. fresh guinea-pig's serum on the eleventh and fourteenth days, without effect. On the twenty-eighth, thirty-third, and thirty-eighth days subdural injections of 6 c.c. of Flexner's serum, plus 4 c.c. fresh human serum, were given, also without effect.

No *post-mortem* examination was obtained.

CASE VIII.—J. H., aged 2 years, admitted on the sixth day of illness. Symptoms of cerebro-spinal meningitis typical: retraction of head not very marked: considerable rigidity of the muscles of the neck: Kernig's sign present: squint: pupils sluggish: cerebro-spinal fluid opalescent: meningococci abundant. The illness lasted twenty-eight days, when death occurred. The temperature during the first four days of illness gradually fell to normal, but from that time onwards it fluctuated between 101° F. and 104° F., and finally reached 105·8° F.

Treatment.—On the sixth, eighth, and eleventh days subdural injections of 20 c.c. anti-meningococcic serum (Allen & Hanburys', Lister Institute), plus 5 c.c. fresh human serum, were administered, but without effect. On the seventeenth day a similar injection was given, substituting fresh guinea-pig's serum for human serum, also without effect.

No *post-mortem* examination was made.

THREE CASES OF PNEUMOCOCCAL MENINGITIS.

CASE IX.—H. W., aged 16 years, admitted on the fifth day of illness. Extremely ill; unconscious; delirious. Marked symptoms of meningitis. Cerebro-spinal fluid turbid;

turbidity chiefly due to the extreme abundance of pneumococci. Death occurred on the eighth day.

Treatment.—Subdural injections of 25 c.c. anti-pneumococcic serum (Meister, Lucius, and Bruning), plus 5 c.c. fresh human serum, on the fifth and seventh days without effect.

Post-mortem examination.—Whole of brain and cord covered with thick pus: no primary lesion found in ears, lungs, or heart.

Case X.—D. C., aged 4½ years, admitted on the fifth day of illness. Extremely ill: delirious and unconscious; symptoms of meningitis typical: cerebro-spinal fluid turbid: turbidity almost entirely due to the presence of pneumococci. Death occurred on the eighth day of illness. Two subdural injections of 25 c.c. anti-pneumococcic serum (Meister, Lucius, and Bruning), plus 5 c.c. of fresh human serum, were given on the fifth and seventh days of illness. On the sixth day 25 c.c. of the anti-pneumococcic serum were administered subcutaneously. No effect was noted after any of the injections.

Post-mortem examination.—Vessels of the meninges deeply congested; surface of the brain pink in colour; thick purulent exudate in all the sulci, most marked at the base and over the surface of the cerebellum; cord also thickly coated with exudate. All the other viscera seemed healthy.

Case XI.—T. M., aged 22 years, admitted to hospital on the second day of illness, which began with sickness and vomiting. Soon after the onset the patient became drowsy. This was followed by delirium, and when being transferred to hospital the patient had several convulsions. On admission he appeared to be extremely ill, and was quite unconscious.

There was no retraction of the head, but the muscles of the back of the neck were rigid: Kernig's sign was present; the conjunctiva was congested; the pupils were dilated and responded sluggishly and irregularly to light. The left was the more irregular in outline. There was no otitis media.

Both lungs and heart were apparently healthy. Lumbar puncture, performed soon after admission of the patient, yielded a turbid fluid from which a fibrinous coagulum separated. The exudate consisted of polymorphonuclear and mononuclear leucocytes, but these were not abundant.

The organism found was a gram-positive encapsulated diplococcus, entirely extracellular, and having the morphological appearances of the pneumococcus.

Treatment.—Blood was withdrawn from the median vein of the patient and also from that of another patient, who was at that moment at the beginning of the crisis in lobar pneumonia. From each, 7 c.c. of fresh serum were obtained within four hours after withdrawal of the blood. These sera were combined with 10 c.c. of the anti-pneumococcic serum (Meister, Lucius, and Bruning). The patient was then anæsthetised, 50 c.c. of cerebro-spinal fluid withdrawn, and the combined sera injected into the cerebro-spinal canal. At this time the patient's temperature was 101·2° F., and the pulse-rate 110 per minute. On the following day there was an appreciable improvement in his condition, the pulse being stronger and steadier, and the inequality and sluggishness of the pupils less marked. The patient, however, remained unconscious.

Twenty-four hours after the first injection the two patients were again bled. By this time the patient suffering from lobar pneumonia had improved very much, his temperature being then normal. Fifteen c.c. of serum was obtained from each of these patients, and the total quantity, along with 10 c.c. of anti-pneumococcic serum, was injected intraspinously after the withdrawal of about 50 c.c. of cerebro-spinal fluid, which was still opalescent and showed the presence of pneumococci. On the following day the temperature was 99·2° F., the pulse-rate 76, and the patient was able to answer questions in a dazed manner. The temperature became normal on the sixth day of the patient's illness, and from that time onwards improvement was rapid. A complete recovery was made.

In this case the principle, already mentioned, of adding complement to the cerebro-spinal fluid was carried out; but, in addition, two notable, and probably very important, methods of supplying immune bodies were adopted, namely, that which supplied the patient's immune body, and, secondly, that which added the immune body of the other patient who was at the critical period of the lobar pneumonia, when anti-bodies are likely to be most abundant in the serum.

Since this case came under observation further opportunities of carrying this method into practice have not occurred, but it seems to be worthy of consideration if occasion should again bring two similar cases together.

NOTES ON A GLASGOW PHYSICIAN.[1]

By GEORGE M'INTYRE, M.B., C.M., F.R.F.P.S.Glasg.,
President of the Glasgow Eastern Medical Society.

On looking over some volumes of the *Glasgow Medical Journal* of about sixty years ago, I came upon some references to investigations conducted and discoveries made by Dr. Robert Macgregor of this city, then recently deceased. Dr. Macgregor's work was quite unknown to me, and on making enquiries I found that it was unknown to some of my medical friends. It seems probable, therefore, that there may be a number of practitioners in Glasgow and the neighbourhood unacquainted with the achievements of this Glasgow physician, especially as his name does not now appear in our modern text-books. At the present time when Glasgow, like the rest of the country, is still mourning the death of Lord Lister, and is preparing to raise a suitable memorial to that great pioneer of aseptic surgery, and when we are celebrating the centenary of Dr. Livingstone, it is fitting that we recall other names, also associated with Glasgow and its Royal Infirmary, whose labours and triumphs, though less renowned, make them well worthy of a place in our memories.

In the hope that some account of Dr. Macgregor's work may be of interest to medical men in Glasgow, I have put together the following notes, mainly extracted from the pages of the *Glasgow Medical Journal*:—

In the *Glasgow Medical Journal* for July, 1856, Dr. Joseph Bell in an article entitled "Remarks on the treatment of the cases of diabetes admitted into the Glasgow Royal Infirmary from November, 1854, till April, 1856," gave a short history of the discoveries made by investigators with reference to the pathology of this disease. In this history we are told that—

> About the year 1674 Willis first pointed out the sweet smell and taste of diabetic urine. Four years later Cowley extracted sugar from the fluid. Previous to this period medical men were not

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[1] Read at a meeting of the Glasgow Eastern Medical Society held on 19th March, 1913.

aware of the existence of sugar in the urine. They regarded the disease as a species of consumption, in which the patients ate and drank inordinately, passed large quantities of urine, and became rapidly emaciated. . . .

In 1815 M. Chevreul made his important discovery, which may be considered as introducing the second era in the history of the disease. Willis made known the existence of sugar; Chevreul discovered the *kind* of sugar. He proved that the sugar of diabetic urine was similar to that which is obtained from the juice of grapes, or from the action of diastase on starch. This discovery, in its turn, gave rise to new theories regarding the nature and treatment of the disease. In the year 1825 Tiedemann and Gmelin propounded the doctrine that the sugar resulted from the abnormal assimilation of starchy and farinaceous substances. Several ingenious opinions were offered in explanation of the manner in which this conversion of starch into sugar took place. The most plausible of these was that of M. Bouchardat, announced in a memoir read before the Academy of Sciences in 1838. He asserted that there was generated in diabetes a substance which acted on starchy matters in the same way as diastase, and that this converting substance was frequently, if not always, produced by suppressed cutaneous secretion. He proposed to cure the disease by withholding from the patients the use of all kinds of farinaceous and vegetable aliments, and by the frequent use of the hot bath and other diaphoretics. The views of Bouchardat were only enunciated to be discarded, in consequence of the discoveries of one whose early death we have much reason to lament, and whose contributions to medical science have shed a lustre over the Glasgow school. I allude to the late Dr. Robert Macgregor. He published in May, 1837, the results of his experiments, which completely set aside the views of Bouchardat. It is but fair, however, to state, that this writer was not aware of the experiments of Macgregor when he published his memoir.

The discoveries of Dr. Macgregor therefore constitute the third era in the history of diabetes. He demonstrated that sugar was formed in the body of a diabetic patient when animal food was exclusively used; that sugar, in such cases, existed in the blood and other secretions as well as in the urine; and thirdly, that sugar was formed during the digestion of vegetable matters by *non-diabetic* patients.

Magendie and others, following in the path which Macgregor pointed out, established the fact that sugar passed normally into the system, as the result of the digestion of farinaceous matters. Hence it became necessary to find out some new theory to explain the production of sugar in the diabetic. The most plausible was that of Mialhe, published in 1844. He retrograded back to the blood origin of Willis, with this essential difference:—Willis held "that the mass of blood becomes, so to speak, melted down, and is too copiously dissolved into a state of serosity, which is sufficiently manifest from the prodigious increase of the quantity of urine, which cannot arise from any other cause than the solution and waste of blood."

Thus wrote our countryman in 1674. One hundred and seventy years afterwards, we find Mialhe asserting that the sugar formed during the digestion of farinaceous substances becomes absorbed into the blood, which, being of an alkaline character, enables the sugar to be transformed by deoxydising some other constituent of the vital fluid—a well-known property of sugar when it exists in alkaline solutions. He affirmed that in diabetes this transformation or oxydation of the sugar did not take place in consequence of the blood being in an acid or non-alkaline condition. The sugar was alleged in this manner to accumulate in the blood, and become excreted by the kidney; or, in other words, he held that the transformation of the sugar in healthy alkaline blood was the normal condition—was health, and that the non-conversion of sugar in acid or diseased blood was disease—was diabetes. He accounted for the acid condition of the blood, partly from suppressed cutaneous secretion, and partly from the too frequent use of acids, especially acidulated drinks and vegetable diet. Hence the origin of the alkaline treatment—hence the restriction from vegetable diet.

These opinions governed the medical world until the experiments of Bernard proved the theory of Mialhe to be as fanciful and unreal as that of Willis. The discoveries of Bernard regarding the sugar producing function of the liver commences the fourth era in the history of diabetes. . . .

Willis established the *existence* of sugar; Chevreul discovered the *character of that sugar;* Macgregor proved the existence of sugar in the stomach and *blood;* . . . Bernard discovered the *organ* by which this sugar is formed.

Dr. Bell then goes on to speak of the important points established by Bernard: but, as my concern is with Dr. Macgregor, I now draw attention to the following footnote by Dr. Bell:—

The gift of genius is not restricted either to age, country, or caste. It is as extensive as the human race. We see, on the one hand, Willis, the physician of Charles II, amidst all the luxury, revelry, and temptations of such a court, eschewing all such seductive pleasures, and devoting himself to the study and improvement of his profession. On the other hand, we perceive a youth, born in the far north, amidst the roaring surges of the mighty Atlantic, spending his boyhood among nature's "wilds, the heathy mountain, and the brecken dell," imbibing the elements of knowledge at one of those parochial schools which, as centres of knowledge, have for centuries sent forth their rays into the remotest parts of this country. In prosecution of knowledge, the young man comes to this city; he obtains the appointment of apothecary to the infirmary, and when he had scarcely numbered his twentieth year, he instituted the experiments that resulted in those discoveries, which overturned theories and opinions that had long prevailed, opening up new fields for investigation, in which such veterans as Magendie became followers of, and joint labourers with, the youthful Highland pioneer. Even the brilliant discoveries of Bernard are to be traced to those of Macgregor. It was the light which the latter evolved that led the way for that distinguished Frenchman, by whom, I regret to say, no acknowledgments have been made of the source from which he obtained the clue to his own discoveries. But history will supply the omission, and more than one pen has already done justice to Macgregor. His name, so long as the science of medicine exists, must remain associated with the pathology of diabetes. Discoveries like his can never cease to exist. They shall never pass into nothingness, but will always continue to guide and instruct future generations.

Thanks to Mr. Hirst, the assistant secretary of the Royal Faculty of Physicians and Surgeons, I have been able to obtain for perusal from the Faculty library a copy of the paper by Macgregor to which Dr. Bell referred. It is entitled "'An experimental enquiry into the comparative state of urea in healthy and diseased urine and the seat of the formation of sugar in diabetes mellitus,' an essay submitted to the Faculty of Physicians and Surgeons of Glasgow when candidate for admission into that body, by Robert Macgregor, Licentiate of the Royal College of Surgeons in Edinburgh, and late Apothecary to the Glasgow Royal Infirmary." As the title imports, Macgregor was chiefly concerned in deciding by chemical experiment if the doctrine long held were accurate that in certain diseases urea was either absent from the urine or deficient in quantity, and it is only towards the latter part of his paper that he speaks of his investigations with regard to the presence of sugar in the body fluids.

The account of his researches on urea in diseased urine is interesting reading, as, both with regard to diabetic and albuminous urine, he not only details the methods adopted by himself to determine the quantity of urea present, but explains why earlier experimenters had failed to find urea. After giving his results on the question of urea, Macgregor enters into a detailed account of investigations undertaken to decide the accuracy of the statement made, that in the case of diabetic patients the quantity of egesta (or matters passed by urine and stool) exceeded that of the ingesta (or matters taken into the stomach). "After seeing several *post-mortem* examinations of such patients, and observing nothing materially at fault in the kidneys, I began to think, with several, that the digestive organs were directly concerned in the disease, and that the kidneys were but secondarily affected." He then proceeded to test the vomit of healthy individuals as well as diabetic patients, and found sugar, as we would now expect, in the vomit of healthy men when fed on a mixed diet. After clearing out the stomach and intestines by an emetic, followed by a purgative, he fed the subject of experiment for three days on roast beef and water exclusively. Several hours after the last meal he administered another emetic, and tested the vomit. It was found that the vomit of diabetics still contained sugar in quantity, while that of healthy persons similarly dieted had none. From this, as Macgregor says, "we would be led to infer that in diabetes mellitus the seat of the formation of sugar is the digestive organs, and not the kidney, as has been alleged by many."

Macgregor then speaks of searching for and finding sugar in the blood of all the diabetic patients examined, and mentions that two cases had formerly been reported of sugar found in the blood of such patients, but that others had failed to confirm this. He quite casually remarks that "he was able to detect a trace of sugar even in the blood of healthy individuals when fed on a vegetable diet."

From finding sugar in the blood he was led to examine other body fluids, such as saliva, liquid of stools, and sweat. Sugar was found in several cases, but not always, in the saliva, and was easily found in the liquid of stools. In his paper Macgregor says that he failed to find sugar in the sweat of diabetics, but it is interesting to learn from Dr. Robert Perry that in 1851, while resident in the Infirmary under Dr. Macgregor, he was able to show the existence of sugar in the sweat of such patients.

These experiments led to the following conclusions:—

1. That we know of no disease characterised by the absence of urea, though in some the quantity is, in common with some of the other ingredients, diminished.

2. That the quantity of urea is quite independent of that of the sugar; the former increases, not by reason of the disappearance of the latter, but because the patient has been put upon liberal doses of animal diet, opium, or some other powerful palliative which checks the excessive thirst, and thus concentrates the urine.

3. That in diabetes the quantity of urea is materially increased in

consequence of the great quantity of food introduced into the stomach, either vegetable or animal.

4. That the sugar is formed in the digestive organs, and that the kidney is a mere outlet in common with the other excretory organs of the body.

5. That it is readily discoverable in the blood, saliva, and stools of diabetic patients, and even in the blood of healthy persons who indulge in vegetables.

Macgregor therefore showed that diabetes was a constitutional disorder, and not, as had been believed, a disease of the kidney.

In the review of Claude Bernard's works which appeared in the *Glasgow Medical Journal* (vol. iii) for January, 1856, the reviewer says—

> In his second lecture M. Bernard gives a historical account of the discoveries made in regard to diabetes before he commenced his own investigations, in which it is curious to observe he has omitted all mention of the discovery which, of all other, was the most important, and tended more directly to that which has rendered his own name illustrious—we allude to the discovery of sugar in the blood and various secretions of the body. It was the late Dr. Macgregor of this city, to whom, as Dr. Watson (afterwards Sir Thomas Watson), of London, remarks, we are indebted for the full exposition of this interesting fact. Dr. Macgregor's discoveries were published in the *Medical Gazette* in 1837. M. Bernard's first *brochure* on this subject appeared in December, 1843. When we consider that the sole evidence upon which M. Bernard ascribes to the liver its glycogenic or sugar-producing power is the fact that the presence of sugar is detected in one part of the circulation—viz., the hepatic veins—and cannot be found in another—viz., the portal vein—we have done enough to show how much value ought to be attached to the labours of Dr. Macgregor.

Farther on the same reviewer says—

> At this part of his lecture he suddenly leaves the subject of the influence of the nervous system to tell us that he has made a great number of experiments, and found that there is a species of election in the excretion of matters eliminated from the system. In respect to sugar, he finds that it is excreted only in two ways, one by the kidney and the other by the stomach. Its excretion by the kidney had been long known, and that by the stomach had already been established by Dr. Macgregor in a series of careful and exact experiments. By the way, the only allusion which our author makes to Dr. Macgregor is at page 430, when he calls in question, on the authority of Lehmann, the statement of Macgregor that the quantity of urea excreted in diabetes is greater than in the normal state.

On p. 126 of the *Glasgow Medical Journal* for April, 1855, appears the following obituary notice which I have copied *in extenso* as it appears impossible to make extracts without serious mutilation:—

Death of Robert Macgregor, Esq., M.D.

It is with deep regret we record the death of Dr. Robert Macgregor, one of the physicians to the Glasgow Royal Infirmary, and an occasional contributor to this *Journal*, which event took place on the 20th of March last. Few men had a more extensive circle of acquaintances, or more warmly attached friends. From a profession in which he had achieved great successes, and a social position which opened up to him every prospect of honour and emolument, he has been cut off at the early age of 45 years.

Dr. Robert Macgregor was a native of Ardchattan, Bonaw, near Oban, Argyllshire, where his aged relatives and family still reside. After receiving such elementary instruction as could be imparted in his native village, he was sent, when about 15 years of age, to this city, in the University of which he successfully cultivated classical literature, and acquired the rudiments of medical science. At this period he became the pupil of the late Mr. John Stirling, an able and accomplished practitioner, a dexterous operating surgeon, and an enthusiastic teacher of anatomy in the Portland Street School of Medicine. Under such tuition the strong natural talents of young Macgregor were evoked and matured to such a degree that he became the intimate friend and companion, and ultimately the colleague, of his accomplished preceptor. Before entering on the duties, however, of Lecturer on Chemistry in the School of Medicine already referred to, Dr. Macgregor had resided for several years in the Glasgow Royal Infirmary as superintendent and apothecary, in which institution he conducted those investigations into the nature of diabetes, which at once stamped him as an accurate observer and an original thinker, and acquired for him a European reputation. The experiments and observations which he made on diabetes were presented to the scientific world in the form of a probationary essay to the Faculty of Physicians and Surgeons of Glasgow, when he became a member of that body in 1837. To Dr. Macgregor belongs the merit of unfolding the true nature and pathology of the dreadful malady just named, and of directing the medical profession to sounder views and more rational practice. This just tribute to minute observation, untiring industry, and logical inference has been willingly conceded to our lamented friend; and in all the standard works on medicine, which have since appeared throughout the civilised world, the name of Robert Macgregor has been identified with diabetes. It consists with our knowledge that Bouchardat, of Paris, one of the highest authorities on renal diseases in France, and the late Golding Bird, who occupied a similar position in

London, both expressed their personal obligations some years ago to our friend, when on a visit to these respective capitals. When in our Royal Infirmary he also made a series of observations regarding the quantity of carbonic acid which is expired from the lungs under certain circumstances, more especially in reference to the amount given off when the skin is rendered unable for the discharge of its functions by the existence of small-pox and similar diseases. These observations likewise have been favourably received throughout the world of medicine. Subsequently, he became one of the physicians in that institution in which, at a very early age, he had laid the foundation of those well-merited honours which his medical brethren in all countries had done themselves honour in conferring. To the higher duties of physician to our infirmary he brought, in his maturer years, the same patient observation, the same ceaseless industry and zeal which had characterised him in his younger days, when he acted as superintendent and apothecary. Dr. Macgregor had also an extensive private practice, and seldom failed to become the personal friend, as well as the professional adviser, of those who required his aid.

It would be unpardonable to close this brief memorial of our late able and excellent townsman without referring to his unwearied and invaluable services, rendered in every possible shape, to the poor Highlanders. There was not, we believe, a society in this city connected with the Highlands of which he was not an active and zealous member. Under a retiring and unobtrusive disposition he concealed a heart that never failed to respond to any appeal uttered by a Celtic tongue, and among the many who will feel his loss his Highland countrymen, always deep and earnest in their attachments, will, perhaps, next to his actual relations, chiefly mourn his early decease and cherish his amiable memory.

For a considerable time past, the health of Dr. Macgregor had been fatally shaken. An attack of inflammation of the lungs, caught, we understand, from emerging on a cold night from the heated wards of the infirmary, caused his life, about two years ago, to be dispaired of; and although he afterwards rallied so far as to resume his professional labours, the seeds of disease were irrevocably implanted in his constitution, and no treatment could arrest the fatal termination. Dr. Macgregor was unmarried.

Since writing the foregoing notes, I have been so fortunate as to receive from the relatives of a country practitioner, now dead, a copy of the testimonials in favour of Dr. Macgregor, which were printed apparently when he was a candidate for the Chair of Medical Jurisprudence in Glasgow University. The pamphlet is entitled "Testimonials in favour of Robert Macgregor, Surgeon, Lecturer on Chemistry in the Portland Street School of Medicine, Glasgow; Licentiate of the Royal College of Surgeons in Edinburgh; Member of the Faculty of Physicians and Surgeons of Glasgow: of the Chemical Society of London, &c.; and Author of 'An experimental inquiry in diabetes mellitus,' 'Pharmacopeia in Usum Nosocomii Regii Glasguensis,' 'Experiments on the quantity of carbonic acid evolved from the lungs in health and disease,' &c." It was printed by James Hedderwick & Son, Glasgow, Printers to the Queen, 1841, and contains recommendations from many well-known authorities. As is natural in the circumstances under which these testimonials were given, Dr. Macgregor's special qualifications for the post desired, particularly his knowledge of toxicology and chemistry in general, were emphasised, while his medical researches were only occasionally and casually referred to. We may, however, take the following extracts:—

From Thomas Thomson, Esq., M.D., Professor of Chemistry in the University of Glasgow; F.R.S. London and Edinburgh, &c.—When apothecary to the Glasgow Infirmary he paid minute attention to several cases of diabetes at that time in the house. He showed that the sugar which characterises that disease is produced by the organs of digestion and not by the kidneys, and made many other important physiological observations both new and interesting.

From Robert Christison, Esq., M.D., Professor of Materia Medica in the University of Edinburgh, &c.—I have much pleasure in repeating to yourself what you have been rightly informed, I have several times had occasion to express in my clinical lectures that your late contributions to the chemical pathology of diabetes mellitus have done more to elucidate the nature and treatment of that disease than any researches that have been made public for many years.

From Lyon Playfair, Esq., Ph.D.—I read with much interest your memoirs on the carbonic acid evolved from the lungs in health and disease. The results obtained by you are exceedingly curious, and serve to throw much light on the physiology of respiration. This is a subject of the first importance, and one that is now attracting much attention from the most distinguished chemists of Germany. You must have seen that your memoir has been translated into all the principal medical and chemical journals of that country, and has, I have reason to know, been duly appreciated there.

From Robert Willis, Esq., M.D., M.R.C.P. London, Lecturer on the Principles and Practice of Medicine, &c.—Mr. Macgregor has handled one of the most interesting, but, till he wrote, obscure subjects in practical medicine in the very best and most philosophic manner. He not only shows himself the ingenious experimenter, but the enlightened physiologist and profound pathologist.

From J. A. Easton, Esq., M.D., Professor of Materia Medica in Anderson's University.—To a minute acquaintance with all the details of medical science, Mr. Macgregor adds a profound knowledge of chemistry and toxicology, which has frequently been displayed to the greatest advantage in the Courts of Justice and in the records of medical literature. His researches, in particular, into the nature and properties of diabetic urine, and his suggestion of oxalate of soda as a test for arsenious acid, are examples of industry and ingenuity which have procured for him the approbation of the scientific world.

From Thomas Graham, Esq., Professor of Chemistry, University College, London (dated 7th April, 1840—and procured when a candidate for another appointment).—To this I may add, that some points in animal chemistry have received from you their best illustration, as the formation of sugar in the system under diabetes, an investigation of which the accuracy and great value are now admitted by all chemical physiologists.

From the reviews and notices of Dr. Macgregor's publications the following extracts are taken :—

From Robert Willis, M.D., in his work on "Urinary Diseases and their Treatment."—These discoveries of Ambrosiani and Maitland (regarding the presence of sugar in the blood of diabetic subjects) have been amply confirmed by Mr. Macgregor, of Glasgow, in his admirable "Inquiry into the state of urea in healthy and diseased urine, and of the seat of the formation of sugar in diabetes mellitus," an essay which I cannot but consider as one of the most complete and valuable contributions ever made to pathological science.

From La Presse Médicale (Tome 1, 1837).—Ce travail, que est le résultat de nombreuses recherches que l'auteur a eu l'occasion de faire pendant sept ans qu'il remplit les fonctions de pharmacien à l'Infirmarie Royale à Glascow, a paru M. Rayer assez intéressant pour qu'il ait bien voulu répéter avec M. Guibourt la plupart des expériences indiquées, par le chimiste Anglais. Nous sommes heureux de pouvoir donner à nos lecteurs les résultats de ce nouveau travail, qui ajoute beaucoup à la valeur du mémoire. Pour eviter les répétitions, nous mettons en note les observations de ces Messieurs ; elles seront ainsi en quelque sorte le Commentaire et le complément du Mémoire de Monsieur Macgregor.

I fear I have been tedious, but believe that the evidence produced proves, not only that Dr. Macgregor's work was very important, but also that it was so recognised by his contemporaries both at home and abroad. Macgregor's discoveries have been completed, and also overshadowed by those of Bernard, but they mark nevertheless an important stage in the history of the pathology of diabetes.

Obituary.

GAVIN P. TENNENT, M.D. GLASG., F.R.F.P.S.,
CONSULTING PHYSICIAN, WESTERN INFIRMARY.

BY the death of Dr. Gavin P. Tennent, on the 13th of last month, Glasgow has lost one of her best known and most popular consulting physicians.

Born at Strathaven sixty-seven years ago, he received his early schooling in the parish of Avondale, whence he passed to the University of Glasgow. After completing his medical classes he became House Surgeon with Dr. Eben. Watson, and subsequently House Physician with Professor Gairdner, in the Royal Infirmary. Meanwhile, having attained his majority, he graduated M.B., C.M., with high commendation.

As is the case with many, if not with most of us, his first venture in general practice was beside the mark. Young Tennent set off to Doncaster and became assistant to a somewhat old-fashioned practitioner there; but in a few months they parted company, doubtless to the satisfaction of both, and Tennent returned to Glasgow. It was now that his opportunity presented itself, and he seized it. At the suggestion of Dr. J. B. Russell he became Resident Physician to the Glasgow Fever Hospital, and while there he graduated M.D. in 1870. In 1875 he was admitted a Fellow of the Faculty of Physicians and Surgeons. Enjoying the friendship and support of two such influential men as Professors Leishman and Cowan, with whom he had been, and was still to be, professionally associated, he began general practice in Glasgow in 1872. With such backing his practice rapidly grew. For a period of years he assisted Dr. Cowan in the work of the Chair of Materia Medica in the University, and though Dr. Tennent failed to succeed his chief and friend when the latter resigned his professorship, it probably gave him little concern. He was now Visiting Physician to the Western Infirmary, and had the largest consulting practice in the city.

As a teacher of clinical medicine he had few equals. He was an enthusiast, and had the gift of infusing fervour into his students. Details that with most teachers would have been dry in the extreme became in Tennent's hands full of life and interest, and his listeners found that when he had come to the end of the particular disease under consideration they had without conscious effort attained an enduring mastery of the subject. Thus it came about that when, owing to the demands of private practice, Tennent in 1896 resigned his appointment at the infirmary the loss to clinical teaching was great, as was realised by all who had had the good fortune to be members of his class.

His position as a consultant he continued to retain as long as his strength permitted, but for some time past he felt the wish, if not the need, for more rest and leisure.

Personally, Dr. Tennent was shy and retiring, and he had comparatively little intercourse in a social way with his professional brethren; but no doctor was more trusted and beloved by his numerous patients. His loss will be keenly felt by many whom his hearty and cheering words, not less than his skilful treatment, helped through times of trouble. He was unmarried, and his only remaining sister predeceased him in the beginning of this year.

ARCHIBALD PEARSON, M.D. GLASG., J.P.,

IBROX.

BY the death of Dr. Archibald Pearson, which took place at his residence in Ibrox on 7th ult., an old and much respected practitioner in the southern district of the city has been taken from us. Deceased, who was in his eighty-first year, received his medical education at the University of Glasgow, and graduated M.D. in 1863. A student in the old Royal Infirmary, he was one of the late Lord Lister's dressers, and after graduating he commenced practice in South Uist. He subsequently removed to Glenelg, and, more than forty years ago, he returned to Glasgow and took up practice in the South Side. A singularly lovable man, he enjoyed the confidence and respect of his patients and of a large circle of friends.

Dr. Pearson is survived by his wife and a grown-up family, of whom a son is in practice in Ibrox.

GEORGE MIDDLEMISS, M.D. Durh., L.R.C.P. Ed., L.F.P.S. Glasg., Darlington.

Another old Glasgow student has passed away in the person of Dr. Middlemiss, of Darlington, who died on 4th August, aged 68 years.

Dr. Middlemiss, who obtained the Licence of the Faculty of Physicians and Surgeons in 1871, was a resident physician in the fever-house of the old Royal Infirmary. Shortly after qualifying he commenced practice in Darlington, in which place he continued his professional labours till within a few weeks of his death. In 1889 he took the M.D. of Durham, and in the same year he was elected President of the North of England Branch of the British Medical Association. He was officially connected with several life assurance companies, and his presidential address to the Branch was on "Hospital Misuse and Life Assurance." In addition to private practice he was for thirty years Medical Officer to the Workhouse, and the presence of a large number of the Darlington poor at his funeral was a tribute to the kindness and consideration which he always showed to them.

Deceased also took a keen interest in the Volunteer movement, and joined the Force in 1861. In 1902 he received the V.D., and in 1907 he retired, with the rank of Surgeon-Colonel, from the 1st Volunteer Battalion Durham Light Infantry.

DUNCAN M'CALLUM, M.B., C.M. Glasg., Tarbolton.

We regret to have to record the death, which took place on 17th ult. in the Western Infirmary, of Dr. Duncan M'Callum, Medical Officer of Tarbolton. Deceased, who was in his forty-fifth year, was a native of the parish of Morvern. He received his medical education at the University of Glasgow, and graduated M.B., C.M., in 1888. He was for a time Medical Officer for the united parish of Pennygown and Torosay, Isle of Mull, and left there to take up practice in Tarbolton. In the latter place he was very successful, and, in addition to private practice, he held several public appointments.

Medicine did not absorb the whole of Dr. M'Callum's energies. He was interested in the breeding of Highland ponies, and, a recognised authority on horses, he was a prominent figure at many Ayrshire and Argyllshire cattle shows.

Deceased, who died after a protracted illness, is survived by his widow and a young family.

ROBERT CLEMENS SCHLOMKA, M.B., Ch.B. Glasg.

Dr. Schlomka, whose death at sea on s.s. *Hyson*, on 11th ult., was recently announced, studied medicine at the University of Glasgow, and graduated M.B., Ch.B., in 1907. After graduation he was for a time Assistant in the Perth District Asylum at Murthly. He was the younger son of Dr. Clemens Schlomka, well known in Glasgow educational circles from his long connection with the teaching staff of the High School.

CURRENT TOPICS.

THE GLASGOW MEDICAL SCHOOL.

We publish the following particulars of the medical curriculum in view of the near approach of the winter session, which opens on the 13th inst.:—

University of Glasgow.

The University grants four degrees in medicine. Of these, the M.B. and Ch.B. must be taken together.

The following outlines of the regulations for graduation are in accordance with the New Medical Ordinance, which came into operation on 1st October, 1911:—

Before commencing his medical studies, the student must pass the preliminary examination. This comprises (1) English, (2) Latin, (3) Mathematics, (4) An Additional Language, namely, Greek, French, German, Italian, or such other language as the Senatus may approve. In the case of a candidate whose native language is not English, certain modifications may be made in the preliminary examination.

The certificate of having passed the above examination must, along with satisfactory evidence of the applicant having attained the age of sixteen years, be transmitted to James Robertson, Esq., 54 George Square, Edinburgh, so that the intending student may be registered in the books of the General Medical Council. Certain other examinations, or a degree in Arts or in Science from a recognised University, are accepted as exempting from the preliminary examination.

The degrees of M.B. and Ch.B. will not be conferred unless the candidate has been registered in the books of the General Medical Council for at least five years previously. The academical year commences on the first day of October. In each year there is one medical session of not less than thirty teaching weeks. The session is divided into three terms, two of which are deemed the equivalent of a winter session and one the equivalent of a summer session. Two of the five years of medical study must be spent at the University. There are four professional examinations. Of these, the first comprises Botany, Zoology, Chemistry, and Physics. Candidates are admitted to examination in any of these subjects, after attendance on prescribed course or courses, at times to be determined by the Senatus. Those who have passed the first professional examination may be admitted to the second (Anatomy and Physiology) after the end of the sixth term (*i.e.*, second year). The third examination (Materia Medica and Therapeutics and Pathology) may be taken after the end of the ninth term (*i.e.*, third year). The final examination is open to those who have passed the third examination and completed the fifteenth term (*i.e.*, fifth year). The examination comprises Medical Jurisprudence and Public Health, Medicine, Surgery, and Midwifery, and the Diseases peculiar to Women and to Infants. Every candidate for the final examination must submit a declaration, in his own handwriting, that he has completed his twenty-first year, or that he will have completed it on or before the day of his graduation. The final examination is, like the other three examinations, held twice yearly—at the close of the winter session and of the summer vacation.

Class fees vary; for the majority of classes the fee is £4. 4s.

Clinical courses are taken in the Western and Royal Infirmaries. Attendance on the classes of the physicians and surgeons in both institutions is recognised for purposes of graduation. In addition to clinical courses, the Professors of Medicine, Surgery, and Midwifery at the Royal Infirmary conduct courses of systematic lectures.

Women students are admitted to certain classes in the University buildings. The remainder of the classes are held in Queen Margaret College. The clinical classes are taken in the Royal Infirmary.

The higher degree of M.D. may be taken by anyone who holds the Bachelor's degrees in medicine and surgery, on his complying with certain conditions. These are: That he must be of the age of twenty-four years or upwards: that he produces a certificate of having been engaged subsequent to having received the degrees of M.B. and Ch.B. for at least one year in attendance in the medical wards of an hospital or in scientific work bearing directly on his profession, such as is conducted in the Research Laboratories of the University, or in the military or naval medical services, or for at least two years in practice other than practice restricted to surgery. The candidate must pass an examination in clinical medicine, and must submit a thesis, for the approval of the Faculty of Medicine, on any branch of knowledge comprised in the second, third, or fourth professional examination for M.B. and Ch.B., excepting subjects which are exclusively surgical. Similarly, the degree of Ch.M. may be obtained by examination in clinical surgery and the presentation of a thesis on a subject not exclusively medical.

Full particulars of courses, fees, dates of examination, &c., will be found in the *University Calendar* (Messrs. MacLehose & Sons), or may be obtained from Albert Morrison, Esq., Registrar, the University.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

(1) *Triple Qualification* (L.R.C.P.E., L.R.C.S.E., & L.R.F.P.S.G.). —In conjunction with the Royal Colleges of Physicians and Surgeons of Edinburgh, the Royal Faculty of Physicians and Surgeons, Glasgow, grants a licence to practise. This Triple Qualification admits to the *Medical Register*, and those possessing it are eligible for the public services. The course of study and the examinations are similar to those for the University degrees, but the class fees are in many cases lower than those payable in the University. Qualifying courses are held in Anderson's College Medical School and in

St. Mungo's College,[1] and particulars may be obtained from the respective Deans. Regulations for the triple qualification may be had from Alex. Duncan, Esq., LL.D., Secretary to the Faculty of Physicians and Surgeons, 242 St. Vincent Street, Glasgow.

(2) *Fellowship.*—This fellowship is open to registered practitioners of not less than 24 years of age, and of not less than two years' standing. The candidate must pass an examination in medicine or surgery, and in any one of the following subjects which he may select:—Anatomy, Physiology, Pathology, Midwifery, Diseases of Women, Medical Jurisprudence, Ophthalmic Surgery, Aural, Laryngeal and Nasal Surgery; Dental Surgery, State Medicine, Psychological Medicine, Dermatology.

Fee, £50; to one who is already a licentiate of the Faculty, £25. If the candidate does not desire to be eligible to hold office, the fees are £30 and £15 respectively.

EXTRA-MURAL SCHOOLS.

Anderson's College Medical School.—This school is situated in Dumbarton Road, adjoining the main entrance gate to the Western Infirmary. The classes qualify for the M.B. and the Triple Qualification.

St. Mungo's College.—The school is in the grounds of the Royal Infirmary, Castle Street, and the students, as a rule, attend the clinics in the Infirmary. The classes are recognised by the University. They qualify also for the Triple Qualification.

Western Medical School (University Avenue).—Courses in Midwifery and Ophthalmology are conducted, which qualify for the M.B. and the Triple Qualification. Tutorial classes in other subjects of the curriculum are also held in the school. The students receive their clinical instruction in the Western Infirmary.

CLINICS.

Royal Infirmary (St. Mungo's College adjoins), 620 beds.—Visit hour, 9 A.M. daily; Outdoor Department, 2 P.M. Fees, including hospital practice, clinical lectures, and dispensary:—First year, £10, 10s.; second year and perpetual, £10, 10s.; for six months, £6, 6s.; for three months, £4, 4s. Students who have paid fees amounting to not less than £21 to any other hospital in the United Kingdom are admitted on payment of £3, 3s. for six months, or £1, 11s. 6d. for three months. Vaccination, £1, 1s.; pathology, £4, 4s.; or for University graduation, £6, 6s; bacteriology, £2, 2s.; practical pharmacy, £1, 11s. 6d. Fees for the above, as well as for all medical classes connected with St. Mungo's College, are payable to the Superintendent of the Infirmary, Dr. J. Maxtone Thom.

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[1] Many of these courses are recognised by the University as qualifying for graduation. For special regulations, see the respective *Calendars.*

Western Infirmary (adjoining the University), 580 beds.—Visit hour, 9 A.M. daily: Outdoor Department, 2 P.M. Every student shall pay a fee of £10, 10s. for hospital attendance, and, in addition, £3. 3s. for each winter session, and £2, 2s. for each summer session of clinical instruction. Students who have completed their clinical course elsewhere shall be permitted to enter for a six months' course of the *hospital only* on payment of a fee of £2, 2s. The fees should be paid to the Superintendent, Dr. D. J. Mackintosh, M.V.O.

Students who have obtained certificates of attendance during a course or courses of Clinical Medicine extending over not less than nine months, and who have also obtained certificates of attendance during a course or courses of Clinical Surgery extending over not less than nine months, may take courses of instruction on Clinical Medicine and Clinical Surgery on alternate days.

Students "remitted" from the final examination in both Medicine and Surgery can also adopt the alternate day system for their period of further study (which, in the case of candidates "remitted" at the Spring final examination, includes the full term of six months from May till October).

Victoria Infirmary (Langside), 180 beds.—For particulars, apply to the Superintendent, Dr. D. Otto Macgregor.

Royal Hospital for Sick Children (Garnethill), 74 beds.—Outdoor Department, 11·30 A.M. Fee, £1, 1s. for twelve months (Indoor and Outdoor). For information apply to Resident Medical Officer.

Eye Infirmary (174 Berkeley Street, and 80 Charlotte Street).—Hour of visit, 1 P.M. daily. Fee for six months, £1, 1s.; for twelve months, £2, 2s.

Ophthalmic Institution (126 West Regent Street).—Hour of visit, 2 P.M. Fee for a qualifying course, £1, 1s.

Insanity.—During the summer session, a course of lectures is given in the University, and clinical instruction in the Royal Asylum, Gartnavel. Fee for combined course, £2, 2s.

Dr. Oswald conducts, in addition to the above, a clinic on Incipient Mental Disorders in the Out-patient Department of the Western Infirmary.

At Gartloch Asylum, Gartcosh, senior medical students may obtain appointments as resident clinical clerks. The appointments are for six months, and those holding them can attend classes in Glasgow in the earlier part of the day. Applications should be sent to the Medical Superintendent, Dr. W. A. Parker.

Clinical lectures are given at Hawkhead Asylum by Dr. James H. Macdonald, "Mackintosh" Lecturer on Psychological Medicine in St. Mungo's College. Systematic lectures are given at the College as part of the same course.

Fevers.—Clinical instruction is given in Belvidere and in Ruchill Hospital. Fee, for a course extending over ten weeks (once a week), £1, 1s.

Maternity Hospital.—Clinical instruction in Midwifery is given at the Hospital, and there are exceptional facilities for practical work in the Outdoor Department.

Gynæcology.—Clinical instruction is given in the Gynæcological Departments of the Western and Royal Infirmaries.

Diseases of the Skin, and of the Throat, Nose, and Ear are taught in the special departments of the Royal and Western Infirmaries. The *Hospital for Diseases of the Throat, Nose, and Ear* (Elmbank Crescent) affords further opportunities for the study of these diseases.

APPOINTMENT.—John Henderson, M.D., Ch.B.Glasg. (M.B., 1898), F.R.F.P.S.G., has been appointed Visiting Physician to the Royal Infirmary, *vice* Professor T. K. Monro, transferred to the Western Infirmary on appointment to the Chair of Practice of Medicine in the University.

"POST-GRADUATE" *VERSUS* "POST-GRADUATION."—In our August issue (p. 120) we announced the autumn post-graduate courses to be held at the Royal and Western Infirmaries. In the course of a recent correspondence in the columns of the *Glasgow Herald*, suggestions were made by various writers as to the best form in which to conduct such a course or courses. Some criticised the present methods, which in their turn were defended by others. In one of the letters, however. Dr. C. O. Hawthorne goes further, and strikes a new note. He suggests that these courses be re-named. Education conducted subsequent to the event of graduation may, of course, rightly be described as "post-graduation" education; but a graduate is an individual who, having once attained a certain academic position, remains a graduate for the rest of his days, and a "post-graduate" education, here and now, is an impossibility. The graduate, as such, only ceases at death, and therefore the term "post-graduate" cannot possibly have any range of application in the world which now is. Dr. Hawthorne therefore suggests the term "post-graduation course."

Dr. Hawthorne's contention is, perhaps, not so whimsical or pedantic as it may seem. There is in things medical at the present time a tendency to looseness in expression which cannot make for good, and it is to be expected that, above all others, those responsible for teaching should carefully guard against terminological inaccuracies. Surely the term "post-graduate" is not of such old-standing as to put forward the plea of use and wont? And such being the case it is not too much to hope that it will give place to the more correct, and not much more formal, "post-graduation."

"CONTINUITY OF LIFE": PRESIDENT'S ADDRESS TO THE BRITISH ASSOCIATION.—At the eighty-third annual meeting of the British Association, held this year in Birmingham, Sir Oliver Lodge chose as the theme for his presidential address "The Continuity of Life," and he summarised as follows the arguments set forth at length in his address:—

A marked feature of the present scientific era is the discovery of, and interest in, various kinds of atomism; so that continuity seems in danger of being lost sight of.

Another tendency is towards comprehensive negative generalisations from a limited point of view.

Another is to take refuge in rather vague forms of statement, and to shrink from closer examination of the puzzling and the obscure.

Another is to deny the existence of anything which makes no appeal to organs of sense, and no ready response to laboratory experiment.

Against these tendencies the author contends. He urges a belief in ultimate continuity as essential to science; he regards scientific concentration as an inadequate basis for philosophic generalisation; he believes that obscure phenomena may be expressed simply if properly faced; and he points out that the non-appearance of anything perfectly uniform and omnipresent is only what should be expected, and is no argument against its real substantial existence.

In the course of his remarks he referred to the progress of science, beginning when unknown causes were eliminated and treated as non-existent. Such causes must establish their footing by direct investigation and research, carried on in the first instance apart from the long recognised branches of science until the time when they, too, have become sufficiently definite to be entitled to be called scientific. Before all the actions of live things are fully explained, some hitherto excluded causes must be postulated. A living thing obeys the laws of physics, but undoubtedly it initiates processes and produces results that without it could not have occurred. There is plenty of physics and chemistry and mechanics about every vital action, but for a complete understanding of it something beyond physics and chemistry is needed. *Life introduces an incalculable element* amid the laws of physics.

"Matter is what appeals to our senses here and now; materialism is appropriate to the material world; not as a philosophy but as a working creed, as a proximate and immediate formula for guiding research. Everything beyond that belongs to another region, and must be reached by other methods. To explain the psychical in terms of physics and chemistry is simply impossible; hence there is a tendency to deny its existence, save as an epiphenomenon. But all such philosophising is unjustified, and is really bad metaphysics.

"But although life and mind may be excluded from physiology, they are not excluded from science. . . . It is not reasonable to say that things necessarily elude investigation merely because we do not knock against them. Yet the mistake is sometimes made. The ether makes no appeal to sense, therefore some are beginning to say that it does not exist. Mind is occasionally put into the same predicament. Life is not detected in the laboratory, save in its physical and chemical manifestations; but we may have to admit that it guides processes nevertheless. It may be called a catalytic agent. To understand the action of life itself the simplest plan is not to think of a microscopic organism or any unfamiliar animal, but to make use of our own experience as living beings. Any positive instance serves to stem a comprehensive denial, and if the reality of mind and guidance and plan is denied because they make no appeal to sense, then think how the world would appear to an observer to whom the existence of men was unknown and undiscoverable, while yet all the laws and activities of nature went on as they do now. . . . The laws of chemistry and physics . . . are sufficient to account for . . . things up to a point; they account in part for the colour of a sunset, for the majesty of a mountain peak, for the glory of animate existence. But do they account for everything completely? Do they account for our own feeling of joy and exaltation, for our sense of beauty, for the manifest beauty existing throughout nature? Do not these things suggest something higher and nobler and more joyous, something for the sake of which all the struggle for existence goes on? Surely there must be a deeper meaning involved in natural objects. Orthodox explanations are only partial, though true as far as they go. Why do things struggle to exist? Surely the effort must have some significance, the development some aim. We thus reach the problem of existence itself, and the meaning of evolution.

"But if we have learnt from science that evolution is real, we have learnt a great deal. I must not venture to philosophise, but certainly from the point of view of science evolution is a great reality. . . . I see the whole of material existence as a steady passage from past to future, only the single instant which we call the present being actual. The past is not non-existent, however: it is stored in our memories, there is a record of it in matter, and the present is based upon it; the future is the outcome of the present, and is the product of evolution.

" . . . Those who make denials are just as likely to be wrong as those who make assertions: in fact, denials are assertions thrown into negative form. Scientific men are looked up to as authorities, and should be careful not to mislead. Science may not be able to reveal human destiny, but it certainly should not obscure it. Things are as they are whether we find them out or not, and if we make rash and false statements posterity will detect us—if posterity ever troubles its head about us. I am one of those who think that the methods of science are not so limited in their scope as has been thought, that they can be applied much more widely, and that the psychic region can be studied and brought under law too."

In conclusion, Sir Oliver made an interesting statement:—"In justice to myself and my co-workers I must risk annoying my present hearers, not only by leaving on record our conviction that occurrences now regarded as occult can be examined and reduced to order by the methods of science carefully and persistently applied, but by going further and saying, with the utmost brevity, that already the facts so examined have convinced me that memory and affection are not limited to that association with matter by which alone they can manifest themselves here and now, and that personality persists beyond bodily death. The evidence to my mind goes to prove that discarnate intelligence, under certain conditions, may interact with us on the material side, thus indirectly coming within our scientific ken; and that gradually we may hope to attain some understanding of the nature of a larger, perhaps ethereal, existence, and of the conditions regulating intercourse across the chasm. . . . Let us not fall into the old mistake of thinking that ours is the only way of exploring the multifarious depths of the universe, and that all others are worthless and mistaken. The universe is a larger thing than we have any conception of, and no one method of search will exhaust its treasures. Men and brethren, we are trustees of the truth of the physical universe as scientifically explored—let us be faithful to our trust. Genuine religion has its roots deep down in the heart of humanity and in the reality of things. It is not surprising that by our methods we fail to grasp it: the actions of the Deity make no appeal to any special sense, only a universal appeal; and our methods are, as we know, incompetent to detect complete uniformity. There is a principle of relativity here, and unless we encounter flaw or jar or change nothing in us responds; we are deaf and blind therefore to the immanent grandeur around us unless we have insight enough to appreciate the whole, and to recognise in the woven fabric of existence, flowing steadily from the loom in an infinite progress towards perfection, the ever-growing garment of a transcendent God."

Professor Schäfer's address at last year's meeting of the Association roused much interest and criticism, in which latter the pulpit was by no means silent. It is quite evident that Sir Oliver Lodge's words will be much appreciated by theologians; but we do not doubt that scientists also will weigh them well as the expression of the reasoned opinions of a distinguished physicist.

ADMINISTRATIVE VALUE OF ANTHROPOLOGY.—Sir Richard Temple, as President of the Anthropological Section of the British Association, made "The Administrative Value of Anthropology" the subject of his address, urging the special grounds on which training should be given to those who might hereafter be called upon to administer public affairs in distant parts of the Empire. The subjects of the British Emperor-King, he said, spoke between them most of the languages of the world, and Greater Britain exhibited all the many varieties of internal social relations set up by tribes and groups of mankind. Our fellow-subjects followed somewhere or other all the different notions and habits that had been formed by mankind as to the relations between the sexes, both permanent and temporary, as to marriage and what had been aptly termed supplementary unions, and, finally, their methods of dealing with death and worship. They gave expression to ideas which it required study for an inhabitant of Great Britain to appreciate or understand. In many parts of the Empire the routine of daily life and the notions that governed it often found no counterparts of any kind in those of the British Isles—in such matters as personal habits and etiquette on occasions of social intercourse. And yet, perhaps, nothing estranged the administrator from his people more than mistakes on these points. The man who had to obtain knowledge empirically was heavily handicapped. The situation had for some years past been appreciated by the Royal Anthropological Institute and by the Universities of Oxford, Cambridge, and London, and there was every reason to hope that the Public Services Commissioners might act on the recommendation that there should be official training in anthropology of candidates for the Consular, Indian, and Colonial Civil Services.

SANITARY CONGRESS IN GLASGOW.—The thirty-ninth annual congress of the Incorporated Sanitary Association of Scotland was held in Glasgow last month, under the presidency of Dr. Wm. Robertson, Medical Officer of Health for Leith.

The annual general meeting was held on the evening of the 10th ult., and was followed by a lecture by Dr. Thomas W. Drinkwater, of Edinburgh, on "Food and its Preparation."

Dr. Drinkwater, in the course of his lecture, which was illustrated by lantern views, said that our fault (or one of them) as a nation was that our cookery methods were bad and wasteful. A French peasant woman could, with a modicum of meat and a larger proportion of vegetables, make a tasty dish for her husband and family at a cost which would astonish a dweller in any of our towns. And her cooking apparatus, an earthenware pipkin, a handful of charcoal for fuel, and with a stove that had nothing in common with our kitchen range. Our cookery books were to blame to some extent for this state of matters, for they were the most unscientific instruction books that he knew. A little knowledge on the part of our housewives would alter this; remember that to be scientific was to be methodical. He thought very few of our temperance reformers realised that bad cookery was the cause of a good deal of drunkenness. He did not want at all to decry the higher education of women. He believed that there were many women as capable of higher education as men, but there were many more who were qualified for as high a calling, that of motherhood and the managing of a home, and he thought they would agree with him that a sound knowledge of cookery and household management was more likely to render a home happy than a knowledge of algebra or Greek classics. A combination of milk and oatmeal was as nearly a perfect food as one could wish. Why was it that this most wholesome and nourishing dish was going out of fashion in Scotland? One often heard that the unhealthy condition of the poorer children in our towns was due to adulterated milk or to milk from tuberculous cows. He was very doubtful. He once made an inquiry amongst the milk dealers in Edinburgh. He confined his enquiry to the milk sellers in the poorest localities, and he found that they sold more skim milk than sweet. It was cheaper. The children suffered from a want of fat, and this was intensified by what, he was sure, many of them must have seen, these children were fed on the jelly piece. Butter was too expensive, and they had a prejudice, wholly unfounded, against margarine. The health of these children would be immensely improved if margarine or dripping were given them instead of the jam or jelly. There were some people who could not take porridge. Well, in many cases he thought that was fancy, for if porridge was well boiled it ought to be more digestible than bread. The general method of cooking meat cooked it at too high a temperature to ensure the best condition of the albumen. Take the ordinary method of cooking an egg. It was boiled for three minutes, or, if they were lucky enough to get a very fresh country egg, three and a half minutes. What was the result? The white part was hard and overcooked, the yolk was undercooked. The yolk of the egg coagulated at a lower temperature than the white. If they boiled a pint of water and then put the egg in and drew the pan aside and allowed it to remain for twenty minutes, the egg would be found properly cooked, the white and yolk equally, and neither hardened or rendered indigestible. Covering the pan with a modified teapot-cosy was an advantage. The same principles governed the cooking of meat. After recommending the double-vessel method of cooking, and remarking that steaming was a method which was much neglected, Dr. Drinkwater referred to frying. The frying-pan had been described as the lazy housewife's companion, and he thought it deserved the name. When he was a student in lodgings he suffered much from the frying-pan, and he had never forgiven it. One saw many strange things nowadays tied up with ribbon and hung on walls as ornaments, and he should like to see the frying-pan take its place amongst them as an obsolete piece of cooking apparatus. If they wanted to fry, use a frying-kettle and good frying oil. The meat was plunged bodily beneath the heated oil, and by the coagulation of the surface albumen it was sealed, and after cooking the extraneous fat was drained away.

A hearty vote of thanks was accorded Dr. Drinkwater.

The congress was opened on the following day, when Dr. Robertson in his presidential address discussed the tuberculosis problem, and made the striking statement that the city dweller was less liable to attack from the disease than his friend in the country, the heavier incidence among the rural inhabitants being due to bad housing conditions.

Their leading aim must be directed not so much at cure as at prevention. It was the social elevation of the citizens of our country that would bring us within measurable distance of ultimate victory. Facts and figures were at hand to prove that the city dweller was less liable to attack from pulmonary tuberculosis than his friend in the country district. One of the reasons which caused in rural districts this heavier incidence from tuberculosis was the housing conditions. Dr. Robertson then gave a graphic description of the house, of which he said there were hundreds upon hundreds in existence in Scotland. It was not possible to provide every citizen with a house containing several rooms and a kitchen; but every house should be well lighted and ventilated.

Then, again, bad food and alcoholic indulgence entered into the problem of tuberculosis. He could not aspire to solve the drink problem, but he was certain of this, that when suggestions for securing better houses, better feeding methods, and less abuse of alcohol were placed before them in a workable form, they could be depended upon to shape them to command success.

The congress afterwards devoted its attention principally to the question of ensuring a pure milk supply for the country.

The second day of the congress was devoted to a discussion of the housing problem from various points of view, chief interest centering in the question of the best means of providing houses for those dispossessed under the Housing Acts, and whether these should be publicly provided and let at uneconomic rents. In this discussion Dr. Campbell Munro, County Medical Officer for Renfrewshire, read a most interesting paper, in which compulsion to sobriety, economy, and cleanliness was advocated with no uncertain voice. If the scheme he outlined were put in force, it would soon work a change in the condition of the slum-dwellers and, secondarily, of the nation. We feel that he has got hold of a solution of the problem, and we can hardly believe that his words will be altogether unheeded. But, without wishing to appear pessimistic, we fear that, however much social legislation may have advanced within recent years, we shall have to wait for a considerable time before we can hope to see Dr. Munro's views embodied.

PRESENTATION OF MEDALS AT THE CONGRESS OF THE SANITARY ASSOCIATION.—At the annual dinner of the Sanitary Association of Scotland, held in the Grosvenor Restaurant on the evening of 11th ult., the following medical men, amongst other past presidents of the Association, were made recipients of gold medals in recognition of their services to the Association:—Drs. Ebenezer Duncan, A. K. Chalmers (Glasgow), Campbell Munro (Renfrewshire), Professor Glaister, and J. T. Wilson (Lanarkshire).

THE HEALTH OF GLASGOW: MEDICAL OFFICER'S ANNUAL REPORT.—The annual report of the health administration of the city has just been issued by Dr. A. K. Chalmers. In the report, which forms a bulky document, all forms of infectious diseases are dealt with in detail, and there are interesting sections dealing with the work of the Port Local Authority, the housing of the working classes, and the administration of the Factory and Workshop Act. An interesting feature of the report is that bearing on population. At the date of the census, 1911, the population residing on the area now included within the municipal boundary numbered 1,008,487, and may be estimated to have increased to 1,009,933 by the middle of the year. These estimates are based on the census report of the Registrar-General, the City Assessor's return of inhabited houses within the municipal boundary at June, 1912, and the assessment rolls of the several added areas at the same date. Of the census population, 784,496 were within the municipal area of Glasgow as then existing, and 223,991 within the areas subsequently added. From the information now available for the extended areas, the Medical Officer states, it is possible to construct three districts of differing growth, a central one, consisting practically of the Parliamentary area of the city, in which depletion appears to be constant, although varying in rate, and an extra Parliamentary area still within the older boundary, where the growth is only occasionally interrupted, and is at all times much below its former rate. The third district is represented by the area of extension.

The following figures relate only to the area of Glasgow as existing before the extension :—

The birth-rate.—The number of births registered during 1912 was 22,044, and after deducting those not belonging to Glasgow, although born within the municipal area, and adding those born beyond the municipal area, but belonging to Glasgow, there remain 21,812 births properly belonging to the city. This represents a birth-rate of 27·802 per 1,000 persons living, as compared with 21,584 births, representing a birth-rate of 27·513 in 1911. The birth-rate represents an increase in the rate equal to 289 per 1,000,000 compared with 1911. The birth-rate shows considerable variation throughout the several wards. In Kinning Park, Mile-End, Dalmarnock, and Hutchesontown, it exceeded 35 per 1,000 in the order named, while Springburn, Maryhill, Cowlairs, Whitevale, and Govanhill had rates exceeding 30 per 1,000. Other wards whose rates exceeded the mean of the city were Anderston, Kingston, Blackfriars, and Calton, while the lowest birth-rates were recorded in Blythswood, Pollokshields, and Park Wards.

The death-rate.—The number of deaths from all causes registered was 13,797. After making the necessary corrections for deaths occurring in institutions and for extra-mural deaths, the number properly belonging to Glasgow was 12,760. This represents a death-rate of 16·26 per 1,000 living, as compared with 16·44 in the preceding year, or a decrease of 177 per 1,000,000. Excepting the latter year the lowest rate previously recorded was 17·58 in 1906. On the Registrar-General's estimate of population as at mid-summer and uncorrected deaths, the death-rate is 17·6 per 1,000. A table is given showing the deaths and death-rates for each of the several wards for 1912, and for comparison the corresponding rates since 1903. On the average rates for these years it is now possible, with some degree of accuracy, to grade the wards in relation to the mean for the city, and the Medical Officer selects for illustration eight in which the rate is continuously in excess. These are as follows, the figures representing the average death-rate per 1,000, 1903-12 :—Broomielaw, 23·3 ; Calton, 21·8 ; Cowcaddens, 21·7 ; Blackfriars, 21·2 ; Mile-End, 20·5 ; Dalmarnock, 19·4 ; Hutchesontown, 19·4 ; Whitevale, 18·8 ; City, 17·5.

The death-rate from all causes in 1912 was 177 per 1,000,000 less than in 1911. The principle decrease occurs among diseases of the zymotic group. Whooping-cough shows a decrease of 490 per 1,000,000, and diarrhœa and enteritis a decrease of 391 per 1,000,000, while there are also decreases in connection with scarlet fever, enteric fever, and cerebro-spinal fever. On the other hand, measles shows an increase of 289 per 1,000.000, and diphtheria 11 per 1,000,000. Among tuberculous diseases there is a decrease of 37 per 1,000.000. The death-rate from tuberculous diseases other than phthisis declined by 50 per 1,000,000, while phthisis showed an increase equal to 13 per 1,000,000 over the preceding year. The remaining groups—cancer (malignant disease), diseases of nervous system, diseases of circulatory system, and respiratory diseases—show increases. Among the latter, pneumonia shows an increase of 138 per 1,000,000, while the other respiratory diseases show an increase of 31 per 1,000,000 occurred. Among unclassified causes of death there is an increase of 22 per 1,000,000. The effect of low temperature on the death-rate, in the first instance when there was no fog, and in the second in association with fog, has been noted, and statistics relating to the matter are contained in the report.

Infantile mortality.—There were 2,667 deaths of infants under one year, which is equal to a death-rate of 122 per 1,000 births. This is 14 per 1,000 under the rate for last year, and is only 3 above that for 1910, which was the lowest on record. The decrease in the rate for the year may be ascribed to the low temperatures and heavy rainfall which prevailed during the summer and autumn, when diarrhœa is especially prevalent among infants. Of these deaths, 2,394 were of legitimate and 273 of illegitimate children, representing rates of 118 and 185 respectively per 1,000 births of each class. In each class there is considerable improvement when compared over a series of years, and it is a reasonable expectation that still further reduction will result from the increased facilities for supervision which the provisions of the Notification of Births Act and of the Children Act afford. In analysing the causes of death among infants the diseases contained in the group "Immaturity" constitute the largest individual portion of the infant death-rate, and represent a mean rate varying between 49 and 43 per 1,000 male births, and between 39 and 34 per 1,000 female births. Under existing circumstances this is to be regarded as an irreducible part of the infant death-rate—irreducible at least until the causes which prejudicially affect gestation are better known. There is some reason for thinking that among the poorest of the population the proportion of fat and carbohydrates in their dietary is insufficient.

Infectious diseases.—Section II of the report deals with infectious diseases. During the year 30,411 cases of infectious disease were registered and dealt with by the department. This represents an attack-rate equal to almost 39 per 1,000 of the population, which is 3 per 1,000 more than the rate for 1911. Of the total cases registered 7,978, or 26·2 per cent, were treated in hospital. The rate for typhus fever is the second highest rate recorded during the last ten years, although the cases only numbered 34. Enteric fever, on the other hand, was much less prevalent, the cases being considerably fewer than in any previous year. Undefined and puerperal fevers are practically the same as in 1911.

The attack-rate for the notifiable diseases for the city as a whole was almost 9·5 per 1,000, as compared with 29 per 1,000 for the diseases which are not notifiable. Of the notifiable diseases 3·6 per 1,000 were due to scarlet fever, almost 3 per 1,000 to phthisis, and 2·2 to diphtheria. The system of notification of infectious diseases by attendance officers of the School Board now enables the department to register all cases of measles, whooping-cough, and chicken-pox occurring in the houses of scholars.

Non-notifiable diseases.—From all diseases of the zymotic class the death-rate was greatest in Whitevale, Mile-End, Calton, and Broomielaw, where the rates were 3,489, 3,281, 2,832 and 2,776 per 1,000,000 respectively, as compared with 1883 for the city as a whole. In Hutchesontown, Dalmarnock, Blackfriars, Springburn, and Anderston the mean rate for the city was also considerably exceeded. It is worthy of note that the non-notifiable diseases—measles, whooping-cough, and diarrhœa—account for almost four-fifths of the death-rate from all zymotic diseases, the rate for measles alone being 664 per 1,000,000 persons living, as compared with 406 per 1,000,000 caused by all the infectious diseases which are notifiable. The rate for whooping-cough and diarrhœal diseases together is twice the rate for the notifiable diseases.

Diphtheria.—Among the notifiable diseases diphtheria was most fatal, the death-rate therefrom having been 232 per 1,000,000, while the rates from scarlet fever, enteric fever, and cerebro-spinal fever were 93, 51, and 27 per 1,000,000 respectively. There were registered 1,735 cases of diphtheria and membranous croup during the year, compared with 1,897 in 1911, and the number of deaths was 182 as against 173. These figures represent an attack-rate of 2,211 per 1,000,000 living, compared with 2,418 in 1911. The death-rate, on the other hand, was 232 per 1,000,000, compared with 221 for 1911. The morbidity-rate (or the death-rate per 100 cases) was 10·5, as against 9·1 per cent in 1911. Of the total cases 90·3 per cent were treated in hospital.

Enteric, typhus, and scarlet fevers.—There were 244 cases of enteric fever during 1912, of which 219, or 89·8 per cent, were treated in hospital. The number of deaths from the disease was 40, representing a death-rate of 0·051 per 1,000 living. The case-rate for the year was 311 per 1,000,000 living, compared with 489 in 1911, and the case-fatality-rate was 16·4, compared with 15·4 per cent. The attack-rate for the year is the lowest hitherto recorded. The cases of typhus fever recorded numbered 34, and two deaths occurred. All the cases were removed to hospital. The case-rate was thus equal to 43 per 1,000,000, and the death-rate to 3 per 1,000,000 living. The number of cases of scarlet fever notified was 2,893, representing an attack-rate of 3·7 per 1,000 of the population living, and 2,658 of the cases, or 91·9 per cent, were treated in hospital. The deaths numbered 73, representing a death-rate of 93 per 1,000,000 of the population living and a case-fatality-rate of 2·5 per cent.

Tuberculous diseases.—Tuberculosis of the lung or pulmonary phthisis was included under the Infectious Disease (Notification) Act, 1910, and during the year 2,340 cases were registered, giving an attack-rate of 2,983 per 1,000,000. The deaths registered during the same period numbered 1,034, which is equal to a death-rate of 1,318 per 1,000,000 living, and is slightly in excess of that for the previous year, which was 1,305 per 1,000,000, and the second lowest recorded.

The National Insurance Act, 1911, gave specific power to local authorities for the treatment of tuberculosis either in the home, hospital, or sanatorium, and as suggested by a memorandum of the Local Government Board, a report by the Medical Officer on the matter was submitted to the Committee on Health. The development of the scheme for the administrative treatment of pulmonary tuberculosis has proceeded on the general lines of this special report. The question of hospital accommodation for phthisis cases in Glasgow has been under consideration during the year, as that which was available at Ruchill extended only to 64 beds, and at Knightswood and Shieldhall hospitals to 10 beds each. Many cases of phthisis are still under treatment in the parish hospitals. The Corporation have agreed to provide additional accommodotion at Ruchill Hospital for 220 patients. At the present time six dispensaries are in operation, but certain changes are in progress. To replace the dispensaries which were established when pulmonary tuberculosis was made notifiable sites have been obtained at Black Street, Clarendon Street, and Brown Street, Bridgeton.

Since compulsory notification was introduced, 8,162 cases have thus been registered by the department. Of the cases registered during 1910, 1,723 were dead by the end of 1912, while 525 more had either left the city or had been lost trace of at the end of the year. Of the 1911 cases, 96 were dead by the end of 1912, while 298 others had passed from observation. Of the 1912 cases, 766 died during the year, while 175 had passed from observation. On 31st December, 1912, there remained under observation 3,679 cases within the old area of Glasgow.

Housing of working classes.—During the year proceedings under the Housing of the Working Classes Acts, 1890 to 1909, were taken with regard to 95 houses in 11 tenements, which were represented as unfit for human habitation under Section 17 of the Act of 1909. Of the houses represented 47 were single apartments, and 48 were two-apartment houses. Of these, 11 single apartments and 11 two-apartment houses were unoccupied, but in the other houses there were 158 adults and 63 children, making a total of 221. A summary of particulars relating to tenements in congested and insanitary areas, which formed a part of the report for 1911, is also included in the report for this year.

HOSPITAL TREATMENT AND NATIONAL INSURANCE ACT.—At the conference of the American Hospital Association, held in Boston, Mass., on 28th August, a paper by Dr. D. J. Mackintosh, of Glasgow, on "National Insurance in Germany and England" was read. At the close of his paper, Dr. Mackintosh dealt with the question of hospital treatment. He says, to begin with, that the outstanding feature of the English Hospital system is its voluntary character. The hospitals throw open their doors to the necessitous, and give them the best treatment without charge.

The National Insurance Act in England apparently was drafted on the understanding that these conditions would continue, and this has proved to be the case so far. There are no compulsory provisions in the Insurance Act which make it incumbent upon approved societies or insured persons to contribute to the hospital.

In two cases only does the Insurance Act take cognisance of hospitals. In the first case it provides that if an insured person who has no dependants is an inmate of a hospital, it is open to the approved society to enter into an agreement with the hospital and pay the whole or any part of the insured person's benefit to the hospital. The same provision holds good for asylums, convalescent homes, or infirmaries supported by any public authority or out of any public funds, or by charity or voluntary subscriptions. Some hospitals have been able to obtain contributions from the approved societies, but the difficulties are of a "competitive" character, as the sub-section which gives power to the approved societies to enter into an agreement with the hospital has a proviso that if an agreement is not entered into, the benefit may be applied otherwise for the insured person's benefit. It will be seen, therefore, that the society which enters into an agreement with the hospital is placed at a disadvantage in its endeavours to secure members as compared with a society which applies the sickness benefit otherwise for the insured person's benefit, and the hospital suffers.

Another clause in the Act makes it lawful for an approved society to grant such subscriptions or donations as it may think fit to hospitals, dispensaries, or other charitable institutions. It is too early to say whether advantage will be taken of this section, but as the effect of the hospital treatment would be that the insured person would recover more quickly than if he did not have the opportunity of being attended in this manner, the funds of the approved society would receive relief corresponding to the general average reduction of the number of weeks or days effected in each illness so treated. It is not an unreasonable demand that some, at any rate, of the benefit which so accrues to the approved society should be handed to the hospital, but in order that a hospital may take advantage of this Clause an agreement for the purpose must be come to between the society or committee and the hospital, so that the society may give a donation or subscription to hospitals. Very few hospitals have made application up till now, as conditions will no doubt be laid down by the Local Government Board which will to a very large extent interfere with the present management of these voluntary institutions: for example, they will demand that the hospital will be open to inspection at any time by any of the Board's officers or inspectors: that such records will be kept in connection with the hospital as the Board, after consultation with the Insurance Commissioners, may from time to time require: and, further, they may demand that the Board be informed of any proposed change in the management of the institution, and of any proposed alteration in, or addition to, the medical staff of the institution. This strikes at the root of the whole voluntary principle, and is likely to interfere so materially with the progress and efficiency of these institutions that the managers will hesitate to hand over their institutions to be so governed. In July, 1911, the Chancellor of the Exchequer was good enough to receive a deputation from the British Hospitals Association, and at that interview he stated that he was glad to meet those competent to speak on behalf of the hospitals of the country, and he thought that the representatives of the voluntary hospitals were labouring under a misapprehension when they put forward their views that they would be adversely affected by the passing of the National Insurance Act, so far as finances were concerned. He said he considered that "the hospitals of the country were essentially a part of the machinery of civilisation, and he could not imagine any country allowing a single hospital to be closed." But even with the amendments made to the Bill, up till now no provision has been made for institutional treatment, beyond providing sanatoriums for the treatment of tuberculous cases. When an insured person requires a serious surgical operation performed, or requires treatment by a specialist and skilled nursing, he must seek admission to a voluntary hospital. On the 29th July, 1913, the question was raised in the House of Commons with regard to Section 12 of the principal Act, which provides that the sickness or maternity benefit should not be paid to a person who was an inmate of a hospital, or any institution maintained by voluntary subscriptions. The Financial Secretary to the Treasury is reported to have said:—"The actuarial calculations assumed that every sick man or woman would receive full sick pay in some way or another, and the time had come when it should be declared that every man or woman should receive sick pay. A sick man or woman ought to have either in kind or in cash the full amount of the benefit, and he had in mind an amendment which would ensure the payment of the benefit to the insured person. The argument might be put forward that some of the money should go to the hospital. If the insured person were willing some of the benefit could go to the hospital, but he would be very chary in making over to the hospital the whole of the benefit." He further added:—"There ought not to be any pressure put on the patient to sign away his sick pay to a hospital, and he moved an amendment which would ensure that the benefit should be paid to the patient upon leaving an institution in a lump sum, or in instalments, or applied as the particular society or committee thought fit." The question arises, Will the voluntary principle stand this strain? In answer to this question, Dr. Mackintosh sees no reason in the meantime to suppose that the voluntary hospitals in large cities will not be maintained in the future as they have been in the past, but only time and experience will confirm this belief.

This opinion, coming from one with the experience of Dr. Mackintosh, is of considerable value; and, although he is wisely non-committal, he evidently is not at all hopeless as to the future of the voluntary hospital system.

COURSES OF INSTRUCTION IN ELECTROLOGY, RADIOLOGY, &C., IN PARIS.—The Society of Directors of the Laboratories of Radiology and Electrotherapy of the hospitals of Paris has arranged for courses of instruction in the above subjects twice yearly. The courses, which will be theoretical and practical, will be held in November and May, and will each extend over a period of one month. The first course begins on 3rd November next in the amphitheatre of the Hôpital de la Pitié, Boulevard de l'Hôpital, 83, and the opening meeting, which takes place under the presidency of M. André Mesureur, will be addressed by M. le Dr. A. Beclère, physician to the Hôpital St. Antoine.

Information regarding the courses may be obtained on application to Dr. Delherm, Hôpital de la Pitié, Boulevard de l'Hôpital, 83, or to Dr. Aubourg, Hôpital Boucicaut, Rue de la Convention, 62, Paris.

NEW PREPARATIONS, &c.

From Messrs. Evans, Sons, Lescher & Webb, Limited.

Evans' Analytical Notes for 1912.—From this interesting year-book one finds that of 2,400 samples of drugs examined 250 were reported to fall below the standard. The conditions governing the consumption of drugs under the National Insurance Act, which are already making themselves felt, further emphasise the point (according to this *brochure*) that quality is the important consideration.

Attention is drawn to increased cost of production of all staples, and hence a general higher cost to the manufacturer of chemicals and pharmaceutical products.

The reports on the drugs examined make one realise how sharp a watch must be kept on dealers in drugs by a conscientious manufacturing druggist. The reports are arranged alphabetically under the names of the drugs.

In an appendix there are five useful tables, giving accepted standards for oils, fats, resinous substances, melting points, alkaloids, and also a table, volumetric analysis equivalents. The seventh table gives a table of chemical impurities, showing the maximum degree of contamination occurring in the best medicinal chemicals. It is an interesting and instructive *brochure*.

From Messrs. Brand & Co.

Ferrocarnis.—A brownish liquid, stated to be a solution of iron in organic combination with Brand's concentrated raw meat juice. It is to be given in a dose of one teaspoonful in water three times a day with meals. When thus taken, it is found to be a very pleasant fluid with marked meaty taste, and could well be used as a soup at the beginning of a meal to stimulate appetite and digestion. It must not be mixed with water hot enough to coagulate it.

From Messrs. The Bayer Co., Limited.

Tablets "Helmitol" Co.—These tablets are stated to weigh 7½ grains, and to contain equal parts of helmitol and acid sodium phosphate. They are advanced for use in rendering the urine acid and antiseptic.

Tablets Hydrastinine HCl. (Synthetic).—These are oval, silver-coated tablets, stated to contain $\frac{2}{5}$th grain of synthetic hydrastinine hydrochloride, and are advanced for use as a hæmostatic. It is claimed that they afford a standardised method of using hydrastis, which is much superior to the use of ordinary galenical preparations of the drug.

From Messrs. Allen & Hanburys, Limited.

A pamphlet on the *Tuberculins* and their uses as diagnostic and curative agents. In this are set out the various forms of tuberculin used for diagnostic or curative purposes, and the methods of use and dosage are given. The price list of the preparations, syringes, and of fittings suggested for a tuberculin dispensary is incorporated with the other information. This is a useful combination.

A pamphlet containing testimonials and reports on cases of anæmia treated with ferascoli.

OUR attention has been drawn to the display of Messrs. Burroughs Wellcome & Co. at the recent International Congress of Medicine. They not only showed drugs, medical equipment, first-aid, and surgical appliances and instruments, but also arranged a physiological section and an exhibit from their materia medica farm. This well-known firm is always so well to the front in sustaining the reputation of this country in these matters, and their elegant and useful preparations are so well known to the profession, that we do not require to particularise further.

Burroughs Wellcome & Co. have secured unique distinction in connection with their exhibit at the International Congress of Medicine. In two of the sections the highest possible award has been conferred upon them by the International Jury. The two Grand Prizes referred to are awarded for products exhibited in Section 2 and Section 5 respectively. Section No. 2 includes pharmaceutical preparations, fine chemicals, and antiseptics; and Section No. 5 relates to serum therapy, organo-therapy, and bacteriology.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.

SESSION 1912-1913.

MEETING IX.—7TH FEBRUARY, 1913.

The President, DR. A. FREELAND FERGUS, *in the Chair.*

I.—MR. J. HOGARTH PRINGLE read a paper on "Two Patients operated on for aneurysm: (1) Subclavian, (2) Popliteal."

II.—MR. J. HOGARTH PRINGLE and PROFESSOR W. K. HUNTER submitted a communication on "A Patient operated on for Acromegaly."

III.—DR. J. GOODWIN TOMKINSON read a paper on "Cases of Coccogenic Sycosis under Treatment."

MEETING X.—21ST FEBRUARY, 1913.

The President, DR. A. FREELAND FERGUS, *in the Chair.*

This meeting was held in the New Clinical Laboratory of the Western Infirmary, where a Pathological Demonstration was given on work carried out in connection with the Laboratory.

I.—SYPHILIS AND CONGENITAL DEAFNESS, OR CONGENITAL SYPHILIS AND DEAFNESS.

By Dr. J. Kerr Love.

Although the former title indicates better the chief object of the work carried out in this connection in this laboratory, the latter is the more embracing because it includes all forms of deafness due to congenital syphilis. These are three:—

1. Post-natal deafness due to congenital syphilis.
2. Congenital deafness due to congenital syphilis.
3. Hereditary deafness complicated by congenital syphilis.

1. *Post-natal deafness due to congenital syphilis.*—This comes during the school period, and is usually preceded by and concurrent with keratitis. The Wassermann reaction with this combination is almost always positive. The family associations of this combination are one or more stillbirths, and one or more cases of meningitis ending in death or deafness, the latter occurring during the first two years of life. There may be a congenitally deaf child in the family. These points are illustrated by the family trees, Nos. 1, 4, 7, 14, and 15, published in *Glasgow Medical Journal*, February, 1913, pp. 86-106.

From the point of view of the Wassermann reaction the feature of this class of case is that not only is a positive result got in the affected individual, but if the family be large enough for the experiment a positive result is got widely throughout the family.

2. *Congenital deafness due to congenital syphilis.*—Unless when a post-natal case of deafness be present this type of deafness is difficult to prove, easy to overlook, and is not fully displayed by any test we have. It is a nearly extinct or quite extinct blood infection. The deafness is sometimes all that is left. The result is often that we get a negative reaction. But if the whole family be tested the cause of the deafness is often discovered. The family associations here are not so striking as in post-natal deafness due to congenital syphilis, but cases of meningitis during infancy and cases of stillborn children are rather common.

These patients are illustrated by the family trees, Nos. 3, 5, 19, 20, 22, and 23, published in *Glasgow Medical Journal*, February, 1913, pp. 86-106.

3. *Hereditary deafness complicated by congenital syphilis.* —Probably this type of deafness is Mendelian in incidence, and the introduction of syphilis does not disturb for long the family history of the deafness. We cannot count on Mendelian ratios coming out correctly with deafness as it does with tall and short peas, because (1) the families are too small, and (2) we do not know whether hereditary deafness depends on one or more factors. But the following characters suggest Mendelian inheritance.

Deafness and Mendelism.—1. It is either transmitted wholly or not at all. Now, if it be meant by this that the hereditarily deaf are totally deaf, this condition is not fulfilled. All the hereditarily deaf have some hearing. But if it be meant that the amount of deafness—or, in other words, the remaining hearing—is a fairly constant quantity, the condition is fulfilled. I have seldom examined a hereditarily deaf child who was just hard of hearing, and I have scarcely ever examined a hereditarily deaf child who had not some remains of hearing—some islands of hearing in the surrounding sea of deafness. Now this is a fact worth noting. Scarlet fever, measles, syphilis, and other causes of acquired deafness may either cause slight deafness or wipe out hearing altogether. The fact that hereditary deafness is a fairly constant quantity makes one suspect at least that it is due to a single cause, and that its incidence will be Mendelian.

2. Being hereditary, and arising during the process of the laying down of the cell layers of the organism, this type of deafness should be due to abnormality of one part of the ear, and this we find to be the case. The organ of hearing is derived from two layers of the blastoderm—the epiblast and the mesoblast—and we scarcely ever find both of these divisions of the organ of hearing affected in a deaf-born child. Hereditary deafness is always due to an affection of the internal ear, and the internal ear is derived from the epiblast. When hereditary deafness is associated with another defect, that, too, is usually an affection of the epiblast—epilepsy, feeble-mindedness, mental deficiency, albinism, &c.

3. If hereditary deafness be Mendelian, it must be recessive and not dominant. I turn here to Professor Bateson for guidance. "Dominant characters," he says, "will, in general, be recognised as such from the fact that they are transmitted through affected persons only." . . . "Recessive characters will be recognised by the fact that they may appear in the

children of parents not exhibiting such characters, and especially amongst children born of consanguineous marriages. Complete proof of the recessive nature of a characteristic will only be obtained by evidence that all the children of affected parents exhibit the characteristic." It will be seen that all these conditions demanded by recessiveness are supplied by hereditary deafness.

In the third type of congenital deafness—hereditary deafness which is probably complicated by syphilis—I cannot verify the suspicion by a Wassermann test, because most of those who would be tested are either dead or for other reasons inaccessible; but the syphilitic taint is indicated by a series of stillbirths, or by other defects commonly due to syphilis—lateness of speech, epilepsy, feeble-mindedness, &c.

II.—Dr. C. H. Browning read a paper on "The Significance of the Wasserman Reaction and some Clinical Applications."

III.—Dr. W. Hyslop Manson made a communication on "The Wassermann Reaction in Ophthalmology."

IV.—THE WASSERMANN REACTION IN CHILDREN'S DISEASES.

By Dr. H. Ferguson Watson.

1. *The Wassermann reaction in children's diseases.*—During the past eight months I have given special attention to the Wassermann reaction in children's diseases. Seventeen hundred reactions have been done (not including many other cases which have been examined as part of the routine work in the laboratory). Of that number, 570 were negative and positive controls, and cases which were done on more than one occasion. Thus it will be seen that I have examined 1,130 sera of my own cases. The investigation is by no means complete, and at present I propose to refer to only a small section of my cases.

In the first place, I took 100 selected children, rejecting those with stigmata, specific history in family (abortions, lesions, &c.), and also all cases in which there was a death in the family, whether it seemed suspicious or not. The Wassermann reaction was negative in 100 per cent.

In the second place, 100 cases were taken at random—

cases which were attending the out-patient department of the Royal Hospital for Sick Children. Of these unselected cases the physical examination and family history were investigated after the result of the Wassermann reaction was known. Twenty-nine gave a positive result—12 showed clinical evidence of syphilis, and 17 were unsuspected (though of the latter it should be noted that 8 were mentally defective). In these 17 cases, unsuspected from physical examination, evidence of syphilis was found in a parent, brother, or sister by obtaining positive Wassermann reactions, and in most cases several members of the family gave positive results.

In 16 cases of congenital heart disease a positive result was obtained in every case. Excluding malformations of the heart, patent foramen ovale, &c., congenital heart disease has in the past been regarded as a rheumatic endocarditis during fœtal life. If the results of the Wassermann reaction are reliable, then clinical and pathological teaching will sooner or later fall into line with the facts found. I have little doubt in my own mind that "congenital heart disease" includes at least two distinct conditions — (*a*) true congenital heart disease; (*b*) an infantile type. In the former condition the illness is, in most instances, observed as soon as the child is born. There is a definite specific history and the child shows evidence of syphilis. The disease is progressive and the child dies at a very early age—no doubt partly because of the severity of the lesion, and partly because vigorous antisyphilitic remedies have not been given. In the infantile form the child is born of a mother who is the subject of rheumatism, and who has had an attack during pregnancy. At birth the child is anæmic and weakly and the child is always breast-fed. About the end of the first week there appears for the first time clinical evidence of heart disease. This condition is never so severe as the former type, and the child does not die at such an early age, though in most chronic cases the cardiac murmur is even louder than in the syphilitic type. In this condition the Wassermann reaction was negative in every case examined. Of these 16 congenital heart cases, 12 have already died.

In 15 cases of meningitis with more or less hydrocephalus a positive reaction was obtained in every case. This also is a true congenital condition. The history is positive, there is positive clinical evidence, and the disease is progressive and death results before the end of the third year.

The foregoing results are what one might reasonably expect, but the results obtained by the Wassermann reaction in the following cases are more difficult to explain.

I have examined the sera of the children of tinkers, gipsies, and tramps—in all 85 cases have been done and the result is 100 per cent positive. Some of the cases appeared healthy, but in most instances it was difficult to exclude syphilis. Here is a family which is typical of some others.

A FAMILY OF TINKERS.

Father, .	æt. 33	—Physical examination negative; negative history; . . . Wassermann	+
Mother, .	,, 32	—Negative history; no abortions; occasional sore throat; 16 pregnancies; Wassermann	+
James, .	,, 15	—Apparently healthy; negative history; Wassermann	+
Jessie, Agnes,	,, 14	,, ,, ,, ,,	+
Abel, Joan,	,, $13\frac{1}{12}$	,, ,, ,, ,,	+
Mary, .	,, $12\frac{2}{12}$	,, ,, ,, ,,	+
Henry, .	,, $11\frac{3}{12}$	,, ,, ,, ,,	+
Wallace,	,, $10\frac{3}{12}$	,, ,, ,, ,,	+
Fergus, .	,, $9\frac{4}{12}$	,, ,, ,, ,,	+
Annie, .	,, $8\frac{5}{12}$	,, ,, ,, ,,	+
Mina, .	,, $7\frac{5}{12}$	,, ,, ,, ,,	+
Martha,	,, $6\frac{1}{2}$	,, ,, ,, ,,	+
Matilda,	,, $5\frac{1}{2}$	,, ,, ,, ,,	+
Hugh, .	,, $4\frac{1}{2}$	,, ,, ,, ,,	+
John, .	,, $3\frac{7}{12}$	,, ,, ,, ,,	+
Philip, .	,, $2\frac{7}{12}$	,, ,, ,, ,,	+
Robert, .	,, $1\frac{8}{12}$	,, ,, ,, ,,	+
Abram, .	,, $\frac{8}{12}$	—Marasmus; liver and spleen enlarged; red blood corpuscles, 3,000,000 per cm.; white blood corpuscles, 14,700 per cm.; hæmoglobin, 40 per cent; Wassermann	+

Date of Wassermann reactions, 22nd October, 1912.

2. *Demonstration of fifty-two Wassermann reactions.*—Fifty-two Wassermann reactions, showing 38 positive results and 14 negative.

1. Positive results in three generations—(*a*) grandmother; (*b*) mother; (*c*) four children (one being mentally defective).

2. Positive results in father, mother, boy, æt. 7; baby with congenital heart disease. The father, mother, and boy

after prolonged mercury treatment. There have been ten abortions.

3. A large family all giving positive results.
4. A tinker's family (parents and nine children) all giving positive results. *N.B.*—All children alive and no abortions.
5. General results in hospital cases—positive and negative.

(The report of this Meeting will be continued in our next issue.)

REVIEWS.

The Nervous and Chemical Regulators of Metabolism (*Lectures*). By D. Noël Paton, M.D., B.Sc. London: Macmillan & Co., Limited. 1913.

It is the purpose of these lectures to consider the various factors which bring about the co-ordination and regulation of the metabolism of the different tissues and organs, and which thus determine the orderly growth of the body in early life, and the harmonious adjustment of the various activities after full development is reached. The influence of the nervous system, more especially as regards its effect on growth and metabolism, is dealt with, Professor Paton giving prominence to the part played by the terminal ganglia, being convinced that few people realise the extent to which emigration of neuroblasts to form the autonomic system goes on. The physiology of the structures yielding internal secretions, their mode of working and inter-relationship, as also their possible reciprocal action with the nervous system, are fully described and discussed. What are called *internal secretions* Professor Paton would have preferred to designate *chemical regulators*. *Ductless gland* he considers a misleading title, and he suggests instead *endocrinous gland*, *i.e.*, an organ producing an internal secretion having some definite and specific action, not necessarily of the nature of excitation. The name of *hormone*, Professor Paton declares, cannot be employed to indicate all the internal secretions, as is the usage of some writers at present.

In considering the physiology of these various structures it has been customary to deal with them according to their anatomical distribution in organs. But this seems to Professor Paton to have led to difficulties and complications, so he classifies them with reference to their developmental source —from the nervous system, buccal cavity, intestine, branchial arches, and mesothelium of the genital ridge.

It is shown how, in early embryonic life, the force of hereditary inertia is the dominating factor in controlling metabolism; that, later, the chemical regulations of the gonads, interrenals, and thymus (primary chemical regulators) come into play as modifying agents; and that still later the influence of the nervous system becomes more and more prominent, till finally it is itself further directed and controlled by the production of internal secretions from the chromaffin tissue (suprarenals and carotid glands) and the other neuro-chemical regulators (hypophysis cerebri, thyroid, parathyroids, pancreas, thymus, and gonads).

The inter-relationships of the endocrinous glands are fully gone into, and Professor Paton leans to the view that the interaction is primarily a chemical one so far as the production of the secretion is concerned, and not an indirect one through the nervous system. Compensatory hypertrophy and complementary action are also considered, but it is recognised that the knowledge we possess is all too inadequate to allow us to formulate with any precision the reciprocities of the various endocrinous structures with one another, Nevertheless, Professor Paton has reduced the probable inter-relations to the form of a series of charts or diagrams, which he is careful to state may well be a grotesque parody of what will ultimately be found to be the truth.

It is pointed out that the chemistry of only two of these internal secretions is known to us—iodothyreoglobulin and adrenalin. The evidence at our command would appear to indicate that these two bodies belong to that group of substances of which a certain minimum amount of each seems to be absolutely essential for the maintenance of the activities of the various tissues, and, further, that some proportion between the amounts of each must be kept up if the metabolism is to continue in its normal course. The mode of action of the other internal secretions is probably of the same kind. "Thus sugar cannot be properly stored in the absence of the internal secretions of the pancreas, while in the absence of the secretions of the chromaffin tissue, of the hypophysis, and of the thyroid, it is imperfectly mobilised. For the proper growth of bone, and for the development of the special sexual characters, small amounts of gonadin are necessary. Without the parathyroids the stability of the spinal synapses is no longer maintained, while, on the other hand, for the normal responsiveness of these synapses the secretion of the thyroid is necessary. The fact that more than one of these organs may act in a similar manner allows of compensation being established after removal of one—as is seen in the case of the thymus and gonads."

Such a conception, concludes Professor Paton, is more in accordance with facts than that of a series of hormones or excitors directly calling forth the activity of the various tissues.

It is interesting to note that this author advances arguments for considering the term *mors thymica* a misnomer, and believes that the condition of the thymus has probably nothing to do with the fatal issue in cases so diagnosed. That the disease in children known as tetany is due to injury or decreased functional activity of the parathyroids, he declares, is not definitely proved.

This is a lucid and succinct account of a difficult subject by one who has investigated for himself many of its aspects, and who has added considerably to our knowledge. And to those of us who take a pride in the Glasgow School it is especially gratifying and inspiring to find how frequently in his text Professor Paton alludes to original observations, confirming or upsetting dogma, by the band of workers he has attracted and directs. Thus, scattered through the book will be seen numerous references to researches, published and unpublished, conducted in his laboratory by W. Abel, J. D. Cameron, Cathcart, Drummond, L. Findlay, Fleming, Henderson, L. M'Ilroy, Pollock, Taylor, and Watson. Long may Glasgow flourish by bringing *ex tenebris lux*—the motto that Professor Paton prefixes to this volume.

Manual of Human Embryology. Edited by Franz Keibel and Franklin P. Mall. In Two Volumes. Volume II, with 658 Illustrations. London: J. B. Lippincott Company. 1912.

The appearance of the second, and concluding, volume of this *Manual* has been delayed owing to the arrangements regarding the writing of certain of the sections having had to be altered.

The volume contains chapters on the development of the nervous system, sense-organs, digestive tract and organs of respiration, the blood and vascular system, and the urogenital organs. The development of the nervous system, by Dr. G. L. Streeter, is considered under four headings. Beginning with the histogenesis of nervous tissue, a detailed account is given of the origin, so far as known, of the neural elements, neuroglia, neuroblasts, spinal ganglia, and myelinization of nerve fibres, and wherever sufficiently early material has not been available this fact is clearly stated and information given as to the source of the embryos which have been observed. The delevopment of the central, peripheral, and sympathetic nervous systems is then taken up, and here also there is evidence of the same careful handling of the subject. The work of the most recent observers is very fully referred to, and the text is furnished with many illustrations.

A special chapter is devoted to the development of the chromaffin organs and the suprarenal bodies, and is the work of Zuckerkandl, of Vienna. Here the various views as to the origin of chromaffin organs are critically considered, and the relationship of chromaffin bodies to the sympathetic system and to the suprarenals is given in great detail.

In the chapter on the development of the sense-organs Professor Keibel, after some general considerations, gives an excellent *résumé* of work done on touch-cells, lamellate corpuscles and touch-corpuscles, and a very full account of the development of taste-buds. In the section on the olfactory organ he discusses the question as to the relative position of the olfactory and optic nerves. This is followed by a description of the development of the nose and nasal fossæ, in connection with which Jacobson's organ receives a good deal of attention. Keibel looks upon it as "a portion of the olfactory organ which possesses special functions in many animals, but has become rudimentary in man." In the development of the eye the writer firstly draws attention to the essential difference between the eye of invertebrates and vertebrates, and then gives an extremely detailed account of the development of the human eye, followed by that of the ear.

The next chapter, on the digestive tract and organs of respiration, is written by Grosser, Lewis, and M'Murrich. It is marked by the same features as the rest of the work—careful description of what has been observed in man, and attention drawn to the facts of comparative anatomy as helping to fill the gaps.

The blood, the vascular system, and the spleen are considered in a chapter which is the joint work of Minot, Evans, Tandler, and Sabin; and Felix contributes a long chapter on the development of the uro-genital organs. Keibel concludes the work by a chapter on the interdependence of various developmental processes, in which he supports the view of His and Hertwig that the development of each part is dependent on the development of the whole. This chapter is furnished with some of the tables from the *Normentafel* of Keibel and Elze.

It would be difficult to overestimate the value of this *Manual* to English students. Its chapters have been written by specialists in the various departments of embryology, and the plan whereby personal observations are combined with references to those of other investigators undoubtedly adds to the worth of the work. Although intended as an account of what is known regarding human embryology, there are many references to the development of vertebrates generally; but in no case are these allowed to confuse the reader.

English anatomists are greatly indebted to the publishers of the *Manual* for placing in their hands these handsome volumes, which will, we venture to think, occupy the position of a classic among works on human embryology.

A System of Surgery. Edited by C. C. CHOYCE, M.D., F.R.C.S.; Pathological Editor, J. MARTIN BEATTIE, M.D. In Three Volumes. Vol. II, with 18 Coloured Plates, 8 Black and White Plates, and 375 Illustrations in the Text. London: Cassell & Co. 1912.

THIS volume of the *System* is concerned with the surgery of various organs and regions of the body. Beginning with the breast, we have a very good article by Handley. In it the various lesions of the mamma are taken up. Naturally a very large amount of space is devoted to cancer of the organ, and here the author sets forth the results of his investigations on mammary cancer which are already so well known. Benign tumours and other conditions are, however, by no means neglected, and this section of the volume leaves little to be desired. It is followed by an article on the spleen, in which C. Gordon Watson presents us with a readable account of the various surgical conditions affecting this organ. Malformation of the face, lips, and palate, by C. A. R. Nitch, are treated of in a manner befitting their importance to surgeons, and diseases of the tongue, by W. H. Clayton-Greene, are also carefully described. Ivor Back contributes a good article on affections of the salivary glands and floor of the mouth; in it we would specially mention "mumps" and salivary calculi.

The œsophagus, by H. A. Rigby, and the stomach and duodenum, by J. Sherren, are both ably dealt with, and in the succeeding section A. Miles gives in considerable detail an account of lesions of the intestines. The appendix, that much discussed subject, has fallen to P. Sargent, and his account of inflammation of this organ gives a very fair statement of what is known regarding it. The same author writes the section on the peritoneum, which again is followed by such subjects as hernia (M'Gavin), the rectum (Clogg), and the liver and gall-bladder (Turner).

The affections of the genito-urinary system (Walker, Howard, and Bonney) are described in the concluding sections of the volume.

It is not possible here to take up in detail all or any of the sections. We have, however, perused most of them at greater or less length, and we find that throughout the volume a high standard of excellence is maintained. This applies not only to the text, in which there is evidence that the various authors are, in their different subjects, well abreast of present-day knowledge and opinion; but the illustrations also, with which the volume abounds, are of great interest, and are, as a rule, good representations and well reproduced.

The volume appeals to a wide circle, and will be fully appreciated by all who may consult its pages. It is handsomely got up, and reflects credit on its editor and its publishers.

The Difficulties and Emergencies of Obstetric Practice. By COMYNS BERKELEY, M.A., M.D., B.C.Cantab., F.R.C.P.Lond., M.R.C.S.Eng., and VICTOR BONNEY, M.S., M.D., B.Sc.Lond., F.R.C.S.Eng., M.R.C.P.Lond. London: J. & A. Churchill. 1913.

THIS is a beautifully printed and well illustrated text-book which has been issued as a practical guide to practitioners who may encounter any of the numerous difficulties to be met with in obstetric practice.

The physiology and the management of normal pregnancy, labour, and puerperium have been purposely omitted, yet the volume is sufficiently bulky. Little of any importance seems to have been omitted; indeed, the authors by writing in a crisp style, and avoiding any semblance of padding, present their readers with much valuable information.

The opening chapter deals with the difficulties in the diagnosis of pregnancy, then follow thirteen chapters devoted to disorders of the various bodily systems and organs, including those of the pelvis, which may complicate pregnancy. The article on insanity is from the able pen of Dr. Hubert Bond. These chapters form one of the best parts of the book, the prognosis and treatment being in accord with present opinion and experience, and therefore to be specially recommended to the practitioner.

The rest of the book is concerned with the various difficulties, emergencies, and complications of labour and the puerperium, with obstetric operations, and with the diseases and injuries of the newborn child.

The authors state that the views expressed and the methods advised are chiefly founded on their own personal experience; but these views are not infrequently at variance with those generally accepted, even allowing for the fact that experts invariably differ.

The statement that the urine in cystitis is alkaline, as a rule, is contrary to fact, and will mislead the practitioner. It is well known that the commonest form of cystitis in women is due to B.C.C., in which case the urine is acid.

The hæmorrhages receive adequate description, and we note that the authors favour the bag method as against version in the management of all varieties of placenta prævia. Statistics show that in the hands of experts there is little to chose between these methods as regards results; but it has to be remembered that the practitioner does not always carry a de Ribes' bag, whereas he requires no apparatus beyond his hands to perform version.

The Rotunda treatment by tamponade is advised for accidental hæmorrhage, but as regards the concealed variety the authors are contradictory. They rightly state that the uterus is so inert that it is doubtful if plugging can have any effect, yet they recommend its use in a following paragraph.

The authors are in direct conflict with expert opinion when they say that compression of the aorta in *post-partum* hæmorrhage is a "singularly unscientific proceeding." Momberg's method is not mentioned. There is also no advice as to the treatment of cases so anæmic that the uterus cannot respond to local stimulation by douching or to ergot, the first duty being the arrest of hæmorrhage, the second the rallying of the patient.

The terms "sluggish" and "exhausted" are used for "primary and secondary inertia or atony," and they might well replace the older nomenclature as they so adequately express the true condition of the uterus: at the same time, the reader accustomed to the more familiar terms will look in vain in the index for either "atony" or "inertia," and may think them omitted. The same applies to "tonic contraction," which is not mentioned in the index, as it is considered as a subdivision of "hyperactivity of the uterus."

In malrotated face cases it is stated that delivery may be attempted by forceps, dangerous advice when the birth of a full time living child is not possible. Schatz's method of conversion in face cases is recommended. Have the authors ever succeeded with this method which is only applicable to mento-anterior positions? The better Thorn's method is not mentioned, and it also often fails. The Prague method of delivering the after-coming head is described and illustrated, a method so dangerous to the child that we were under the impression it was no longer taught or advised.

In the chapter devoted to flat pelvis the mechanism of delivery described is not that usually seen except in generally contracted flat pelvis, and no mention is made of the hanging-leg position during delivery. No distinction is made between anterior and posterior parietal presentation, a point of great importance to the practitioner, as in the latter presentation version is preferable to forceps, which interfere with the normal mechanism and invariably slip off. Enough has been stated to show wherein differences of opinion may exist; but after all, these only affect a small proportion of a text-book which is likely to prove useful to practitioners.

Mistakes are few in number, but we specially note epidermic (page 78) for epidemic, Langhan's for Langhans', a common error, and metastasises (page 189).

Figs. 57 and 58 should not show the cord, as *post-partum* hæmorrhage occurs after delivery of the placenta. Fig. 129 shows the right blade of the forceps being applied first. This is a serious error.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

MEDICINE.

Aortic Aneurysm Rupturing into the Pulmonary Artery, with a Report of Three Cases. By Holland Newton Stevenson, M.D. (*Johns Hopkins Hospital Bulletin*, July, 1913).—Among the 3,900 autopsies at the Johns Hopkins Hospital the three cases reported are the only ones of perforation of a thoracic aneurysm into the pulmonary artery. In two of the cases the aneurysmal sac was large, and had a free opening into the pulmonary artery. It is interesting to compare the physical signs of these two cases with those of the third case, which had a small sac and a recent pin-point perforation into the pulmonary artery. The points of clinical differentiation may be summarised as follows:—

1. Enlargement of the heart to the right (Cases 1 and 2); no enlargement to the right (Case 3).

2. A continuous thrill and murmur in the carotid and subclavian (Cases 1 and 2); a single murmur and thrill (Case 3).

3. In the third left interspace (Case 1) a continuous murmur, with an overlying, rough, systolic murmur; Case 2 had a continuous murmur, with a systolic accentuation; Case 3 had a systolic and a diastolic murmur.

4. Cases 1 and 2 had a collapsing pulse, while Case 3 had not.

In Case 1 the aneurysm originated from the transverse arch: in the other two, from the ascending arch of the aorta. The points of perforation into the pulmonary artery were, in Cases 1 and 2, on the anterior surface of the artery, 5½ cm. and 1 cm. from the ring respectively. In Case 3 the perforation took place on the posterior wall behind the posterior cusp of the pulmonary valve.

The immense hypertrophy of the right ventricle in Cases 1 and 2 indicates that the pulmonary perforation had been present for a relatively long period of time.

In the third case the perforation, although recent, did not cause the patient's death, while in the other two cases it had existed for so long a time that the conclusion can be drawn that perforation of an aneurysm into the pulmonary artery is not incompatible with life.—ARCHD. W. HARRINGTON.

Hema-uro-chrome: A New Laboratory Test for Cancer and Sarcoma, also a Method of Separating Bile Acids and Pigment with the Application of Torquay's Test, Indican being Obtained if Present. By Theodore G. Davis, Ph.G., M.D. (*American Journal of the Medical Sciences*, June, 1913).—The bile acids and colouring matter are obtained in a concentrated form by the following method:—To 100 c.c. urine in a flask of about 150 c.c. capacity add 10 c.c. hydrochloric acid. Heat slowly till ebullition begins. Cool and add 30 c.c. ether. Agitate occasionally by turning the flask, avoiding hard shaking. After about twelve hours remove the ether into a clean white dish, and allow it to evaporate spontaneously. The bile acids and colouring matter will remain. The acids may be converted into salts by the addition of a small amount of a 1 per cent solution of sodium bicarbonate and the several tests applied.

Torquay's test is a recently prepared solution of methyl violet, 1 to 2,000 of water (1 drop of the saturated alcoholic solution in 1 oz. of water). Two test-tubes are half filled with this solution. To one is added a small amount of the above solution of bile, which discharges the blue tint, leaving the red. The other tube serves for comparison. Davis considers this the most distinctive test for bile he has used, and has verified its reliability.

Indican, if present, will be seen on the white dish as a ring above the bile acids and colouring. During the use of this method the ether was occasionally found pink, even red in colour, and upon evaporation a more or less heavy deposit of hæmatin would be seen above the indican and constituents of bile.

Observations extending over four years lead the author to state that this pink colouration may occur to a slight degree in diseased conditions of the liver, when the hepatic cells are unable to convert the product of the lysis of erythrocytes into bile acids and colouring substances. It is found in jaundice, in the infectious fevers, malaria, "tick fevers," and the anæmias. But by far the greatest amount and intensity of colour obtained by the process described was found in the urine of patients suffering from malignant disease, either cancer or sarcoma. The urine of these patients does not differ macroscopically from normal urine.

The author has named this red substance tentatively "hema-uro-chrome," but hesitates to affirm its composition. He thinks it may be regarded as a combination of hematin and an indoxyl base, produced by the lysis of erythrocytes and the destruction of proteid by the cancer cell. He has made very numerous observations during the past four and a half years on cases of malignant disease, both cancer and sarcoma; and has never found the reaction absent, even when the growth was of small size.—Arch. W. Harrington.

SURGERY.

Surgery of the Thyroid. By Charles H. Mayo (*The Journal of the Amer. Med. Assoc.*, 5th July, 1913).—During the past twenty-five years, 5,000 operations have been performed on the thyroid at St. Mary's Hospital, Rochester. They are classified as follows:—

Simple goitres, ...	2,396
including—	
Transplantation, in cretins, ...	11
Operations for malignancy—carcinoma, 52; sarcoma, 7, .	59
Operation on syphilitic thyroid, ...	1
Exophthalmic goitres, including double and single ligation, extirpation, partial thyroidectomy, ...	2,295
Early operations not classified, majority simple, . . .	309

The occasional large goitre in the cretin contains little active parenchyma. If it causes distress it should be removed. The Mayos have tried transplantation from the gland of the mother and from cases of simple and exophthalmic goitre to cretins without, in any of their cases, obtaining function of the transplant.

In operations on the thyroid the posterior capsule of gland should be preserved because of the difficulty of identifying the parathyroids. Treatment of operative tetany with calcium lactate and beeves parathyroid with thyroid extract has been very effective.

The best incision in operating on the thyroid is through a transverse incision low in the neck. Should further exposure be necessary the sternohyoid may be cut high up in the exposed area. In simple goitres it is best to extirpate a greatly enlarged lobe. If both lobes are symmetrically enlarged, division of the isthmus with double resection of the gland gives the best cosmetic result. Midline encapsuled adenomas should be enucleated with division of the isthmus. Lateral encapsuled adenomas may be enucleated or the whole lobe extirpated.

If symptoms of hyperthyroidism are present extirpation is indicated. In severe cases of hyperthyroidism, in acute attacks, and in relapses, the condition should be considered medical until improvement takes place. If no improvement becomes manifest injections of boiling water (Porter) may give relief.

During the first three or four months of the symptoms extirpation can be carried out safely as the heart is not then dilated. Should it be dilated to exceed one inch, primary ligation of the superior thyroid vessels is indicated, followed in four months by extirpation. After the first year a much smaller percentage of cases requires primary ligation.

The results of operating on simple goitres are very satisfactory. Operation in cases of hyperthyroidism gives about 75 per cent of cures, while the remaining 25 per cent are more or less benefited according to the degree of complication and the stage of the disease. Probably 10 per cent have some degree of relapse in from one to three years after the operation.

If the patient is in good condition a general anæsthetic is preferred. Ordinary patients receive $\frac{1}{4}$th grain of morphin and $\frac{1}{150}$th grain of atropine half an hour before operation. In the case of patients suffering from grave complications local novocaine anæsthesia is employed. A combined local and general anæsthesia (Crile) is of advantage in many cases.—ROY F. YOUNG.

GYNÆCOLOGY AND OBSTETRICS.

The Relation of the Peritoneum to the Uterine Muscle.—F. la Torre, of Rome (*Archives Mens. d'Obstét. et de Gynécol.*, May, 1913), publishes his researches on this subject. After remarking that the anatomists have contented themselves with the mere unexplained statement that the peritoneum is very closely adherent over the fundus, he proceeds to describe his own endeavours to find out the cause, with a view to discovering whether the adhesion might not be overcome so as to permit operators to strip the peritoneum off the fundus.

La Torre made sections of the fundus uteri from bitches in their three stages of ovarian rest, heat, and *post-partum*. He made use of various stains, and gives coloured drawings of his sections. These show that the peritoneum dips down between the longitudinal (superficial layer) fibres at the fundus, and there ramifies so intimately through the muscle bundles that it is quite impossible to strip it off. Van Gieson's stain reveals the connective tissue, while Weigert's stain shows up the elastic tissue in these processes, and Ramon y Cajal's method stains both these elements. Bielschowsky's method gives a brownish-black colouration to the so-called *Gitterfasern* of the Germans, which form a sort of fine reticulum between the larger processes, and are not shown by the other stains: these *Gitterfasern* are believed to maintain the muscular fibres in close apposition.

—E. H. L. OLIPHANT.

Treatment of Septicæmia by Antistreptococcic Serum, associated with Turpentine-fixation-abscess.—Funck-Brentano and Roulland (in *La Gynécologie*, April, 1913) record two cases of patients, apparently moribund, who were cured by this combination of treatments. In both patients treatment of the ordinary sort had failed: curetting, swabbing out the uterus with iodine, intra-uterine douches, camphor injections, electrargol had all failed. In both cases turpentine injections gave no reaction and antistreptococcic serum gave only temporary amelioration, and it was only when the turpentine was administered along with the serum that reaction followed. In both cases improvement was marked and continuous after the evacuation of the abscess.—E. H. L. O.

Treatment of Hæmorrhages by Blood Serums.—Weill (in *La Gynécologie*, May, 1913) gives his experience of this method of treating hæmorrhages from the genital organs.

In 1905 he advocated the administration of human blood serum in cases of hæmophilia, basing his opinion on the diminished coagulability of the blood in this class of cases, and on its rapid increase both *in vitro* and *in vivo* when fresh blood serum is added to it. Human blood is, however, not always available in the fresh state, and does not keep well; rabbits do not afford sufficient blood; ox blood is dangerous; but horse serum keeps well, and is on the market either plain or as hemostyle—the blood serum in the stage of recuperation of a horse repeatedly bled. Failing these, antistreptococcic, antitetanic, or, preferably, antidiphtheritic serum can be used. To avoid the risk of anaphylaxis, 1 c.c. may be injected, to be followed by a full dose of 10 to 20 c.c. It may be administered intravenously, but this is more risky and should not be so used unless the patient is in urgent need. It can be given equally subcutaneously or intramuscularly with the usual precautions. Weill prefers one large dose (20 c.c.) to repeated smaller ones. Administration by the mouth is useless, but the serum is well absorbed from the rectum, and this method is of special advantage in cases, say, of menstrual hæmorrhages where the treatment must be repeated monthly. In this class of cases, after the first initial injection, Weill gives five doses monthly *per anum*, on the three days preceding and the first two days of the period. The drug may also be given locally on gauze lightly packed into the uterus.

Cases for this treatment must be carefully selected; it is not a panacea. It is indicated in cases in which the blood shows diminished coagulability and diminished contraction of the blood-clot. If the patient has no personal or family history of being a "bleeder," or if this cannot be seen quickly by the duration of bleeding from a wound, the coagulability must be tested. The duration of bleeding is easily ascertained by puncturing the ear with a wound 1 mm. long and wiping off the drops as they form with blotting paper. Normally, such a wound bleeds two minutes or less; if the bleeding lasts eight minutes—it may last more than an hour—this method may be tried. Special warning is given in regard to bleeding fibroids. In women so suffering the blood is often highly coagulable, as is seen in the comparative frequency of thrombosis in abdominal operations for fibroids. In such cases a dose of serum may precipitate an impending thrombosis.—E. H. L. O.

Presentation of the Abdomen.—Henrotay, of Antwerp, reports (in *Archiv. Mens. d'Obstét. et de Gyn.*, June, 1913) a case in which this unusual presentation occurred, and he gives a drawing of a curious photograph showing the umbilicus and a considerable portion of the fœtus protruding at the vulva; but for the other end of the loop of umbilical cord passing out of the vulva, the drawing would at first sight be taken for one of the placenta being expelled—fœtal side foremost—through a distended vulva.

The presentation was originally one of the shoulder with the right arm prolapsed, and, in spite of the waters having come away some twenty hours previously, awkward attempts at version were made. On admission to hospital the fœtus was found to be dead from prolapse of the cord, and the presentation was as described above. The spinal column was easily hooked out clear of the maternal soft parts and divided with scissors: the pelvic extremity and then the upper were easily extracted. The fœtus, which had no liver, weighed 2 kg. 800. The perineum was not torn, though the mother was a primipara.—E. H. L. O.

PATHOLOGY.

On the Diagnosis of Pregnancy by means of the Optical and Dialytic Methods. By Emil Abderhalden (*Münchener medizinische Wochenschrift*, 1912, pp. 1305, 1959, 2172).—The food which is taken into the alimentary canal is, during digestion, subjected to very fundamental analysis and undergoes absorption only after being reduced to comparatively simple chemical components. From these simpler components, by elaborate synthetic processes, the nutritive materials become reconstituted into more highly specialised forms, of a nature peculiar to the individual organism, and in their ultimate distribution to the tissues these are further specialised and elaborated for the use of individual organs. Accordingly, under normal circumstances the blood and the various tissues of an animal, in assimilating fresh nutritive materials, retain their own specific individuality of constitution.

The direct artificial introduction into the blood of nutritive material of a foreign nature, which may even be derived from some organ of the same species, is received antagonistically and a reaction occurs, with the production of ferments which are specifically active against the foreign material introduced. The presence of such ferments in the serum of a treated animal may be recognised by the optical method, *i.e.*, by use of the polariscope, and by the dialytic method.

For example, if dextrose is injected into the veins of an animal a ferment for dextrose develops in the blood, and if then some of the animal's blood-serum be allowed to act on dextrose *in vitro* it will change that sugar into lævulose and fructose; this change may be demonstrated by the alteration which is seen to occur in the rotational effect of the fluid on polarised light.

The presence of an antiferment to peptone may be similarly demonstrated by the polariscope. The serum of a normal animal does not contain such ferments. Again, if some form of albumen is injected into an animal's circulation a special ferment for that particular form of albumen is developed, and if the animal's serum is now brought in contact with that special form of albumen, it will act on it with the production of peptones. These may be separated off from the mixture by dialysis and their presence in the dialysate recognised by the biuret reaction. In a similar experiment with the serum of an untreated animal, which contains no ferment, no peptone will be found in the dialysate.

In the condition of pregnancy these experimental phenomena are reproduced. The chorionic epithelium, a substance foreign to the blood, gains access to the maternal circulation, and, as a result, antiferments to the peptones and albumens of the placenta are developed in the maternal blood. Their presence there may be recognised by the methods above described.

In carrying out such experiments a fresh placenta is chopped up and boiled in successive quantities of water, so as to separate the peptones in solution and leave the albumens in a coagulated form. The former may be used for the optical, the latter for the dialytic procedure. In the latter case, for example, the serum which is to be tested is placed along with some coagulated placental albumen, free from peptones, in a dialysing envelope, and kept at blood-temperature while being dialysed against distilled water. The dialysate is then examined for peptone. If this is present it indicates that ferments are present in the serum which are active for placental albumens. The results of numerous well-controlled experiments go to show that this condition is met with only in the sera of pregnant women, and it is found that positive results may be obtained even in the early weeks of pregnancy. With proper attention to details of technique a positive result is never obtained with sera of non-pregnant individuals.—John Shaw Dunn.

Books, Pamphlets, &c., Received.

Radium as Employed in the Treatment of Cancer, Angiomata Keloids, Local Tuberculosis, and other Affections, by Louis Wickham, M.V.O., and Paul Degrais. Translated by A. and A. G. Bateman, M.B., C.M. With 53 illustrations. London: Adlard & Son. 1913. (2s. 6d. net.)

Tuberculin in Diagnosis and Treatment: A Text-Book of the Specific Diagnosis and Therapy of Tuberculosis, for Practitioners and Students, by Dr. Bandelier and Dr. Roepke. Second English edition, translated from the seventh revised and enlarged German edition by Wilfred B. Christopherson. With 25 temperature charts, 2 coloured litho. plates, and 5 illustrations in the text. London: John Bale, Sons & Danielsson, Limited. 1913. (15s. net.)

The Place of Climatology in Medicine, being the Samuel Hyde Memorial Lectures, by William Gordon, M.A., M.D.Cantab., F.R.C.P.Lond. London: H. K. Lewis. 1913. (3s. 6d. net.)

London Medical Publications. The Principles and Practice of Medical Hydrology, being the Science of Treatment by Waters and Baths, by R. Fortescue Fox, M.D.Lond., F.R.Met.Soc. London: Henry Frowde and Hodder & Stoughton. 1913. (6s. net.)

A Text-Book on Gonorrhea and its Complications, by Dr. Georges Luys. Translated and edited by Arthur Foerster, M.R.C.S., L.R.C.P.Lond. With 200 illustrations and 3 coloured plates. London: Baillière, Tindall & Cox. 1913. (15s. net.)

Surgical Experiences in South Africa, 1899-1900, being mainly a Clinical Study of the Nature and Effects of Injuries produced by Bullets of Small Calibre, by George Henry Makins, C.B., F.R.C.S. Second edition. London: Henry Frowde and Hodder & Stoughton. 1913. (10s. 6d. net.)

Pye's Elementary Bandaging and Surgical Dressing, with Directions concerning the immediate Treatment of Cases of Emergency, for the use of Dressers and Nurses, revised and partly rewritten by W. H. Clayton-Greene, B.A., M.B., B.C.Cantab., F.R.C.S.Eng., assisted by V. Zachary Cope, B.A., M.D., M.S.Lond., F.R.C.S.Eng. Thirteenth edition. Bristol: John Wright & Sons, Limited. 1913. (2s. net.)

Asthma and its Radical Treatment, by James Adam, M.A., M.D., F.R.F.P.S., Hamilton. With 4 illustrations. London: Henry Kimpton; Glasgow: Alex. Stenhouse. 1913. (5s. net.)

The Practical Medicine Series. Comprising 10 Vols. on the Year's Progress in Medicine and Surgery, under the general editorial charge of Gustavus P. Head, M.D., and Charles L. Mix, A.M., M.D. (Price of 10 vols., $10·00.)

Vol. I.—General Medicine, edited by Frank Billings, M.S., M.D., and J. H. Salisbury, A.M., M.D. ($1·50).

Vol. II.—General Surgery, edited by John B. Murphy, A.M., M.D., LL.D. ($2·00).

Vol. III.—The Eye, Ear, Nose, and Throat, edited by Cassey A. Wood, C.M., M.D., D.C.L.; Albert H. Andrews, M.D., and Gustavus P. Head, M.D. ($1·50).

Vol. IV.—Gynecology, under editorial charge of Charles L. Mix, A.M., M.D., edited by Emilius C. Dudley, A.M., M.D., and Herbert M. Stowe, M.D. ($1·35).

Vol. V.—Pediatrics, under general editorial charge of Charles L. Mix, A.M., M.D., edited by Isaac A. Abt, M.D.; Orthopedic Surgery, edited by John Ridlon, A.M., M.D., with the collaboration of Charles A. Parker, M.D. ($1·35.) Series 1913. Chicago: The Year Book Publishers.

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDED 20TH SEPTEMBER, 1913.

	Week ending			
	Aug. 30.	Sept. 6.	Sept. 13.	Sept. 20.
Mean temperature, . .	54·5°	55·0°	53·4°	51·6°
Mean range of temperature between highest and lowest,	20·7°	16·4°	13·1°	16·7°
Number of days on which rain fell, ...	3	0	5	4
Amount of rainfall, . ins.	0·36	0·00	1·00	0·46
Deaths (corrected), . .	298	374	353	292
Death-rates, ...	15·2	19·1	18·0	14·9
Zymotic death-rates, . .	1·0	0·7	0·9	1·0
Pulmonary death-rates, .	2·8	4·1	2·8	2·7
DEATHS—				
Under 1 year, . . .	85	102	98	67
60 years and upwards, .	50	84	73	87
DEATHS FROM—				
Small-pox, ...	...	...	...	...
Measles, ...	6	10	8	5
Scarlet fever, . . .	3	...	1	3
Diphtheria, . . .	3	1	3	5
Whooping-cough, . .	6	3	4	6
Enteric fever, . . .	...	1	1	1
Cerebro-spinal fever, . .	1	...	...	1
Diarrhœa (under 2 years of age),	37	53	56	30
Bronchitis, pneumonia, and pleurisy, . . .	33	49	30	34
CASES REPORTED—				
Small-pox, ...	...	...	...	...
Cerebro-spinal meningitis, .	1	1	...	1
Diphtheria and membranous croup, ...	35	45	37	50
Erysipelas, . . .	27	22	23	28
Scarlet fever, . . .	67	73	101	128
Typhus fever, . . .	3	...	...	1
Enteric fever, . . .	3	3	8	8
Phthisis, ...	37	32	64	49
Puerperal fever, . .	1	2	1	2
Measles,* . . .	121	128	142	107

* Measles not notifiable.

SANITARY CHAMBERS,
GLASGOW, 27*th September* 1913.

THE

GLASGOW MEDICAL JOURNAL.

No. V. November, 1913.

ORIGINAL ARTICLES.

BYZANTINE MEDICINE: THE FINLAYSON MEMORIAL LECTURE.[1]

By Sir THOMAS CLIFFORD ALLBUTT, K.C.B., LL.D., D.Sc., M.D.,
Regius Professor of Physic, Cambridge.

Mr. Chairman, Ladies, and Gentlemen,—We are gathered together to-day in memory of James Finlayson, a wise physician and a gentle scholar. More than once, with the art of the scholar and the love of the benefactor, he displayed to me some of the treasures of your library. I would that my lecture to-day were more worthy of him.

It was a fine saying of that great historian and physician, Charles Daremberg, that in the domain of mind, as in that of matter, we cannot believe in spontaneous generation. The springs of life and the development of life; its order in variety; its integrations of ever new and broader functions of the world around it; its compass and comprehension;

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[1] Delivered in the Faculty Hall on Friday, 6th June, 1913.

these growing powers, these rich and manifold qualities have their lineage: they have their origin in the past: they have their ancestry, their laws of tradition, their channels of nurture; and if animal development cannot spring directly from the clay into high wrought organs and various functions, neither likewise can the spiritual life. It, too, must have its lineage, its race: from parent to parent the social life is engendered and nurtured: from generation to generation it dwells upon its gradual houses, families, tribes, and rejoices in its children: it learns to reflect upon its history in the past, and from that vantage to reach forth into its future and to imagine its destiny. Societies have their pedigrees as men have: like men they may be true or false to them: they may make themselves greater than their fathers, or they may waste their patrimonies in sloth, perversity, or folly.

Thus, when the Germans swarmed about Rome and broke or penetrated into the city, of themselves they were barren: they were as the formless clay of which I have spoken, out of which there can be no spontaneous generation. Rich the new soil may have been, rich as the ooze of the sea: but there was no past, no spiritual lineage, no political, no intellectual heritage: no ideas, no tradition, no law, or but rudiments of them. Even Theodoric's kingdom was not the framing of a new world: it was but an ark wrought out of the old timbers. Then the Franks, they again had built nothing, and therefore knew not yet how to build. The Merovingians' rule was a bare survival of decrepit forms of the Lower Empire: its rudimentary feudalism was for Rome alien and disintegrating. The Empire in its old form was perishing. The great landowners of Rome could no longer govern or fight: unhappily, for the invaders were not without reverence for the old mother. But authority was waning, fighting was left to the fair-haired Celts from the north, the rude Illyrian warriors, and misery and disease, more cruel than the conquerors, were corrupting the civic body. And what disorder and rapine had begun pestilence finished. Not only was the populace destitute—this was an old story—but, if I may use such a phrase, the "middle classes" also had fallen into misery. Out of the loins of the old body the New Rome on the Bosphorus and, by the Donation of Constantine, the Papacy were born: but the period of gestation was dark and savage.

To turn back for a moment to an earlier period, let us glance at the drift in the policy of the Empire of the first century. In the early Empire provincial government was more or less by consent: by much concession to local races, customs, and even governments, and with some contemptuous tolerance, Rome often ruled but nominally from the centre. She kept the peace without crushing local rule and privilege: but a change, which had been progressing from Julian times, matured under Diocletian, and, under later emperors, stiffened into a calcareous shell. As Dr. Reid[1] says, in place of an Augustus came a kind of Sultan wearing that oriental diadem, the mere dread of which had brought Cæsar to his end: the Emperor was approached with adoration as a living god, and lawyers buttressed his throne with an absolutist theory of the constitution which was universally accepted. By the material grandeur and might of Byantium, which drew its sustenance from both east and west, this splendid despotism was strengthened and glorified.

And, as Europe then was, this transformation may have been inevitable: almost from the end of the Republic it crept on steadily, degree by degree, as if implicit in the nature of things. Perhaps in no other way could the citadel of "culture" have been held against the vast and turbulent hordes which had yet to be tamed and moulded into modern civilisation; in no other way, perhaps, could the soul of the ages have been saved. But the price was a heavy one: the heirlooms of the past were carried into fortress, and for a millennium were immured in a sumptuous, almost a spell-bound treasure house. The calcareous shell was of mother of pearl: the walls and towers of the casket shone in the sun with such splendour as Jeremy Taylor conceived of the Kingdom of Heaven. Exalted in the wilderness of Europe, shining like a sun, radiant with gold and gems, pompous with priests and men of war, Byzantium guarded the precious germs of which a new world was in due time to be born. But meanwhile this very pomp which, to the hordes which beset it, made it seem invulnerable, stiffened the sinews of the defenders. In their serried regiment there was no play for personal freedom, no play for varieties of temperament or diversities of creed. A rigid uniformity of array, an absolute subordination of rank to rank, an unbending orthodoxy of belief were the cement of the fortress, the conditions of its solidity and immunity, and the protection of its sacred store. We shall anticipate, then, that within its walls there would be no expansion, no breathing of the human spirit, but the immobility of a great rock, the silent watch of its sentinels, the enslavement of the poor and the needy, and the bondage of the human mind.

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[1] J. S. Reid, *Cambridge Mediæval Hist.*, vol. i.

And what was this treasure so jealously guarded? Much, many ways: but for our part to-day it was the records of that spirit which we call Greek. In Greece—that is to say, in Attica—this spirit became embodied in forms of beauty which have since commanded the admiration of the world. But regarding this spirit in its full story, we find Greece too narrow a name for its domain. We have but to think for a moment of the gifts of Ionia to the mind of man to perceive that this spirit animated a territory wider far than the land of Greece in its stricter sense. Even Apollo, our own medical god, goes back through his Dorian days to his birth in Lycia. Ægean it is also called, yet even this name is not wide enough. You will be ready, I think without argument, to speak of it as Eastern Mediterranean. We find it in vivid life long before the palmy days of Athens, and on many an after age it shed its blessings. We find it in its rudiments in Crete, in its beauty in Homer: and we trace its shining steps in Arcadia, in Thrace, in Magna Grecia, in Latium, and in many another island and peninsula of this inland sea. The earliest Greek medical schools of which we have any record were at Rhodes, Cyrene, and Croton. Those of us who have visited the wonderful museum of the Villa Papa Giulio in Rome, in which, as we hear from Mrs. Strong, the collections have now been displayed in a larger room, marvel to see from Latium evidences so exquisite of this civilisation; in Latium which, in early Roman days, had become not only indifferent to Greek culture but actively hostile to it.

In my Fitzpatrick lectures I endeavoured to sketch the fortunes of Greek medicine in Rome, where its penetrative power expanded against all thwarting and contempt: in Rome, notwithstanding the blight of the medical tradition of Alexandria, Greek physicians did good and even brilliant work until under Marcus Aurelius medicine culminated in Galen. From that time, although jurisprudence kept its high place, for jurisprudence was Roman rather than Greek, medicine ceased to bloom or to fruit: the harvest for a thousand years was over, and for this art and science the Greek spirit sank into sleep and, but for one man's life perhaps, Alexander of Tralles, lay dormant until towards the eleventh century. If Galen still had lip service it was rather for the more extravagant and fantastic than for the sober and fruitful products of his genius, as testified by his experimental physiology: moreover, he was cherished by the Christian Church for his monotheism,[1] for his teleology, and for his generous and humane defence of the Christians.[2]

From the time of the elder Pliny—before it, indeed, as we know from Cato's "Commentary"—there had been in Rome a strong bent to mere recipe medicine; a semi-superstitious belief in strangely overloaded compounds such as mithridatics, theriacs, and other traditional blends of many drugs; and after Galen this cruder therapeutics almost drove out the intelligent hygienic methods of the school of Hippocrates, and of Alexandria as made known to us by Celsus. Thus, while the excellent Celsus was forgotten, not to be recovered until his exhumation in the fifteenth century by Thomas of Sarzana—Pope Nicholas the Vth—receipt books, such as that of Scribonius Largus and its progeny were cherished, and, as we shall see, provided the mediocre followers of Galen, such as Vindician, Marcellus Empiricus, Lucius Apuleius, Theodore Priscian, down to the two Nicholases, and other herb-gatherers and apothecaries—worthy men in their way, but really the forerunners of the herbalists and quacksalvers of later times—with the contents of their gallipots, and the columns of their antidotaria.

Medicine of any pretence to a scientific quality thus passed, as I have said, into dormancy. The germ, in suspended animation, was enclosed in what nowadays we might call a huge and cumbrous somatic envelope. The great procession of medicine which, streaming from the fountain of Hippocratic times, received the Sicilian tradition of Pythagoras and Empedocles, the great tributary of Greek Alexandria, and the Greco-Roman medicine of Asclepiades, Soranus, Archigenes (Aretæus), and Galen, passed into the chrysalis phase, and thus abode, we may almost say, until the revival of learning. Its feeble glimmers of life before that epoch could hardly be regarded as a new birth. Byzantine medicine then was not a living influence; it had become a tradition, a burial of the talents. The culture of the mistress of the world in this period was imitative and stereotyped; it created no masterpieces, scarcely perhaps, unless in law, a spontaneous and original work in any kind.

The part then of Byzantium in European civilisation was almost wholly one of conservation, or embalmment. Not in science and art only, but in the withstanding of the ruin of the Western world, she stood not for progress, but for holding the fort: and this, partly by strength, partly by inflexible institutions, partly by prestige, she did to a marvel. For original thought, thought which by dissent might have caused agitation or discord, there could be no sufferance. Yet, the all-pervasive Greek spirit was not, could not be, wholly captive even in Constantinople where it still flowed in strange contrast with the officially maintained Latin tongue. In Asia already, under the successors of Alexander, it had penetrated far and wide; into Syria also, as we shall see, into Mesopotamia, into Persia, nay, even to Bokhara and the Ganges. It had made centres for itself in such schools as Edessa and Antioch; and when, for daring to use his troublesome mind, Nestorius was driven out, he rekindled this spirit at Edessa; and when expelled thence also, established, or re-established in Persia the famous, and largely medical, school of Gondisapor. Thus, on the liberation of the literary treasures of Constantinople, Syrian, Jewish, and Arab scholars were ready to fan these embers into a fitful flame, and to restore to Europe its own again. In strange guise, however, it returned; disguised in Syriac or Arabic translations of Greek manuscripts, and in renderings of these again into Latin; and on such maimed and vitiated counterfeits Europe was fain to subsist until the revival of Greek.

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[1] How nearly the Greeks approached to a lofty form of monotheism, see Dr. Gilbert Murray's new book *Four Stages of Greek Religion*, p. 90.

[2] This passage, although preserved only in Abulfeda, is accepted as genuine.

But the elder traditions had suffered more harm than that of waste and corruption. They had gathered moss and blight which had eaten into their life; the intellectual and pellucid Greek conceptions had mingled with Oriental phantasies of which presently I shall have more to say.

For before we fix our attention upon our own art, and on the Faculty here represented by the great College before which I stand, in order that we may understand the conditions of its theory and practice, let me try to sketch in, however slightly, some background of the philosophy and science of the Empire, and especially of the eastern part of it. In the West of Europe, until the rise of the Carolingian and Irish schools, learning had sunk almost into oblivion. We have seen that if in the Eastern Mediterranean Greece as a political power had declined, yet the mission of Hellenism was far from spent. The truth is, Greece never had a great political capacity. Pericles was rather an idealist than a statesman. Comparisons between one state and another, or between one people and another, can seldom run far; but there is not a little likeness between Greece in ancient and France in modern Europe. Modern France, purged by fire and awed by calamity, is born again; and if we look at this great people in the light of history we shall see in them much of the Greek attitude to life; a like temper, a like mission. In them we shall find the same artistic gift, the love of harmony of form—of *ἰσότης*, that untranslatable word signifying free balance, artistic, social and ethical—the ardour and even prophetic passion for general ideas, the devotion to logical symmetry, to mathematics and the physical sciences, and therewith the like instability of political institutions. And in both nations we see like perils in the defects of their qualities: a tendency to exalt form over substance, a desire to think in categories, a surrender to rhetoric, and, in public affairs, a kindred fickleness and turbulence. As France has had, and has still before her, her mission in the West, so likewise had Greece in the East. By their own sacrifice these peoples have inspired the nations of the earth.

But with the bias of the Empire eastwards, before the establishment of its eastern seat, other leavens no less potent were at work, leavens working from the farther East. In part from Egypt, in part from Persia, in part from Mesopotamia, in part from Ionia and Syria, flowed into the Roman Empire streams of thought and passion, many of which would have seemed alien to Europe had they not been greedily absorbed by it. As Greece took her captor captive, so she herself surrendered to the darker witchcraft of the Orient, of Asia, and of Roman Egypt. Even in the third century B.C. the Æsculapian worship, which then was carried from Greece to the Tiber, was gathering into itself elements more and more Oriental, so as lustrations purged the soul the gods were turned to healing the body also; Æsculapius melted into Serapis, Hygiæa, Salus, Soter. Thus the positive medicine of the Hippocratic tradition, which had resisted these superstitions, began to blend with the cults of the Dea Mater from Phrygia, of Isis and Serapis from Egypt, of Mithra from Persia, of Syrian Baalism: cults brought in partly by the subtle waves of the spiritual atmosphere, in part more directly by sophists, slaves, freedmen, and, as it is recorded, by certain peripatetic missionaries of the foreign and mystical creeds. But more than this, more corrupting than all of these—for it may be said that the strange cults, each or many of them, held its own aspect of truth—more baneful than all was the enticement of magic, always the black shadow of mysticism, and, like gambling in the material sphere, the betrayal of human endeavour. Long before the invasion of the mystic cults to which I have alluded, and apparently independent of the mysteries properly so called, the taint of magic was ingrained in ancient Roman and Etruscan societies. It is true that in Ægean history, in times long before the Roman and even before the Athenian civilisations,[1] signs of Oriental influences and Oriental origins are apparent enough. Still, on the whole, these elements were then but elements; in the later Empire they had swollen into an equal or more than equal place with cults and ideas more originally European and, as we think, saner and wiser.

Thus Byzantium, the rampart of Western civilisation, herself became half Oriental: and so forward in time this intimate diffusion of oriental ideas into roman and hellenic thought, the blend of hellenism with orientalism, persisted far beyond Byzantine times, down indeed to our own day: the thought of the Middle Ages it almost dominated, so that some historians regard the accession of Constantine as the opening of the Middle Ages. Perhaps the first formal step into Eastern manners was the assumption of divinity by Alexander the Great, whose ominous example was followed much later, and perhaps inevitably, by Diocletian and the emperors who succeeded him: and, if the Christian emperors of Constantinople were not worshipped quite as gods, they were adored as royal pontiffs, whereby a theocracy and a hierarchy were established which, in spite of the later separation of Emperor and Pontiff, created and perpetuated the boundless and perpetual idea of the Holy Roman Empire.

We know that it is otiose to speculate on the march of history whether as good or evil: our duty is to try to understand it as it was: nevertheless the presumption is that only by this iron rule of divine or semi-divine institutions, by an iron rule which of necessity enthralled the very souls of the people, could the great rampart have been raised against the barbarians and against Islam. It was to serve a temporary purpose of fostering the very rudiments of civilisation that this iron frame was constructed and enamelled with gems: an awful outward symbol of strength and glory. Lest it should be anything less than whole and united, intolerance of dissent was inevitable; it was perhaps necessary that the Nestorians, and even Chrystostom himself, should be driven out, that the opinions of all men should be hammered into solid uniformity, with such consequences for science, literature, and medicine as we shall see presently. For religious institutions, whatever their content, their tension, or their furtherance of holiness, have in their purport and function always been primarily political, and nowhere more so than in the long story of the Roman Empire, ancient and mediæval; heresies were persecuted not as religious but as political perils. Unfortunately in this, as in too many other periods in the world's history, machinery, when it has served its purpose, is not scrapped in due time, but endures to the stifling of young ideas and the bondage of young limbs.

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[1] And even in ancient Greece; see Dr. Halliday's recent book on *Greek Divination*, 1913; Of Witches and Pythonesses in Merovingian Times, and of Gregory of Tours Belief in Divination, see Prou, *La Gaule Mérovingienne*, p. 185.

How majestic in its prime was the Byzantine machine is now well known to the general reader. By the work of Findlay and Freeman, and since then of many writers such as Bury, Miller, and Frederick Harrison, we have learned that Byzantium reached a standard of civilisation far higher than any other state of the Middle Ages, and that the conditions of life there attained a security previously unknown in the world. We have learned that in its noon Byzantium was by no means in all respects inert and decadent. It was the mother of great statesmen and great soldiers, and only a centralised bureaucracy and a despotic court and army could have held together and defended so heterogeneous a populace. Moreover, whatsoever the cost, order was maintained, and, as well as the art of war, jurisprudence attained the high development to which the Institutes of Justinian, the last great Latin act, bear witness. But lawyers are never reformers; as in Bunyan's dream, Legalism and Formalism walk together.

However, law was by no means its only achievement; to last a thousand years a state must have had great virtues. If science and literature were sterile and imitative, producing no masterpiece, yet, in the fine arts, Byzantium had a sublimity of her own, and in history and philosophy she was not wholly wanting. During her best centuries—that is to say, before the crisis of her decadence in the seventh century, before in the sixth century Justinian closed the schools of Athens and Alexandria, and before in the seventh Leo, the Isaurian, closed the Academy of Constantinople—in architecture Byzantium had constructed the dome, and built Santa Sophia; she had developed also the art of mosaic, lofty and austere; when we call it crude and harsh we are perhaps thinking of the restored pictures in S. Maria Maggiore or St. Mark's, and forgetting the visions of Ravenna, in monumental beauty surely comparable with the Elgin marbles. And, if in painting Byzantine artists were arid and jejune, we know that in the arts of enamelling and metal work, and in ivory carving, these craftsmen excelled and made a tradition. Again, the great hymns which Ambrose carried to the Western Church were composed in the Eastern: many of them probably under the inspiration of Chrysostom.

Of the historians of this period we have all heard of Procopius, of Agathias, of Nicephorus and his accomplished wife Anna Comnena, and of Niketas: but there were more of them, not mere chroniclers, but respectable if not brilliant authors. In the later centuries of the city, when in the ninth century the schools had been reopened under Theophilus and Photius, Basil the First and the Comneni, authors of some greater merit arose, such as Photius, Suidas the lexicographer, and Psellus also, who, motley and undiscriminating as he was, yet, as an encyclopædist, was a man of vast learning, and the reviver of Platonism. In the latter part of the eleventh, and in the twelfth century, the renascence was of still brighter promise, until heaps of manuscripts were destroyed, and all culture was thrown back into confusion by the savage violence of the Crusaders: however, this is to stray beyond the limits of my subject.

In all ages the course of medicine has been governed by the contemporary philosophy, and when we turn from war and the arts to the science and philosophy of Constantinople we find ourselves before a vast and manifold syncretism of stoicism, epicureanism, empiricism, and scepticism: the empiricism and scepticism, according to a law of the human mind, being, as in our own day, shadowed by mysticism. This mystic ingredient was made up of neopythagoreanism, neoplatonism, gnosticism, and similar high imaginations. Before Christ, in certain gnostics, we meet with this kind of brain-spinning, and in Philo Judæus also, who, moved by the Old Testament and Talmudic tradition, made no little approach towards the Christian standpoint. In Augustine's opinion, all pagan philosophies might be pillaged by the believer, as the Egyptian gold and silver was carried away by the Israelites. Thus, later, on the Bosphorus old mystery cults blended with new religions, with folklore and superstitions, with allegory and symbol, in all of which demonism took a large place, so that even in the Christian religion, then and long afterwards, exorcists and incantation formed, if not an essential, at least a considerable and formal ingredient.

Demonism, then and since, in Byzantine, Papal, and modern times, entered deeply into the conceptions of East and West, and closely attached itself to medicine: its pallid reflection we may perceive even yet as the "morbid entities" still emanating from distinguished physicians in our midst. In the great time of ancient Greece, it is true, we find allusions to demons, allusions not left unimproved by later scholiasts. But those demons were not the devils of later times, but divine, or quasi-divine, spirits or essences; or they signified only possession by the god (*ἐνθεοί*), as in the Corybants, or as again in dramatic passages as in that of The Knights, crying that *δαιμονῶντες* they would overthrow the city. For us the classical passage is that of Hippocrates, the words probably those of Hippocrates himself, words familiar to us all but which I cannot forbear to repeat, concerning epilepsy, the seizures of which were attributed to the god:—"But to me," he says, "it seems that all diseases are divine in origin, and that no malady is more divine or more human than another, but that each has its own nature, and does not arise without natural causes." To personify disease is a somewhat different conception, and comes nearer to our "morbid entities," as when Hesiod says that some diseases by day, and some by night, stalk abroad *αὐτόματοι*—self-willing and self-moving—bringing evils to mortal men. In Homer we read, of course, of *μάντεις* and incantations (*e.g.*, T. 456). In the Philoctetes (I, 758) we find a similar passage: and Plato (Theatetus, 149 C.D.) speaks of an *ἐπῳδὸς* against pain of childbirth. Thus we pass easily on to Mephitis, goddess of sulphur and foul smells: and the sending of a disease by a god expands into possession by the god, or by an evil spirit, especially in case of agonising and incomprehensible maladies such as epilepsy, or lunacy a name which speaks for itself. Thus, from the Olympians of Homer we pass to *numina*, from numen to nymph (nympholepsy), and so to evil spirits or devils' from the genial inspiration of Pan by easy steps to Artemis and Hecate. The old Pythagorean doctrine of agents of evil influences entering with the food, as with beans, belongs to the same ways of thought, and thus we may travel from Varro, Pliny, and Tacitus to later writers. In the earlier times, however, we were dealing with little more than echoes: from the second century A.D. onwards, by Eastern influences these ideas were enormously inflated. In the magical papyri, and in writings such as those of Alexander

Aphrodisias, we find demonology in full blast.[1] The milder Olympian divinities are degraded, after the Assyrio-Chaldean and mediæval type, into a devil's troop, and medicine becomes a quasi-sacerdotal function—a scheme of exorcism. And we never lose that curious and universal superstition of the power of a name, that to know the name of a person or thing is to obtain a power over it, a notion far from extinct in modern therapeutics.

Origen speaks of "*βίβλια βάρβαρα δαιμόνων ὀνόματα ἔχοντα κὰι τερατέιας.*" Thus, it was with the scarcely different belief in scripts and amulets, such as the *Ephesia grammata* of Plutarch.[2] The magic of music against evil spirits, a notion not without a true therapeutical basis, is familiar to us from the Old Testament: and this medicine degenerated into a prescription of mere noise of the village, warming pans and andirons. And how certain metals, stones, or gems, or again parts of plants and animals, had magical power, how herbs were even to be culled under ritual observance is likewise a story familiar to all of us. In no author to my knowledge can these baser accretions be better studied than in the racy pages of that masterful father, Tertullian, whose works I was enticed to explore some years ago by Professor Harnack:[3] and I am informed that evidence of the same kind is to be gleaned abundantly from Irenaeus, Tatian, and other fathers of the church. To Origen I have made some reference already. Accordingly the fathers of the church, or most of them, possessed by the philosophic ideas which I have mentioned, indignantly rejected material means of healing, for to make use of such means was to deify earthly things. Even the dissection of animals was regarded as sorcery, and many physiological errors were defended as supports of theological doctrines. Medicine and religion were no longer as in ancient times independent. Why not go direct to God himself? And the approach to God was, of course, through the Church and the Priest, whose remedies were laying on of hands (concerning which tradition I wrote in my Fitzpatrick lectures), prayer, and exorcism. Then, as now, fanaticism, whatsoever the good faith of the operators, harked back to lower orders of ideas.

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[1] This reference to Alexander I have not verified, but I suppose it is not to his Aristotelian Commentaries but to his treatises on the virtue of stones, &c., and to the *περὶ δαιμόνων.*

[2] See Wendland's remarkable book, *Die Hellenist-röm. Kultur.*, Tüb., 1907; also art. "Aberglaube" in Pauly-Wissowa; and Tambornini *De Antiq. Dæmonismo*, 1909.

[3] Harnack, *Medicinisches aus d. ält. Kirchengesch.*, Leipzig, 1892. When Christianity became the State religion it was narrow, and harsher than paganism had been; and it seemed to stifle medicine and all the sciences.

But, while repudiating all healing methods akin to magic, we must not forget at the same time to admire and commemorate the sublime devotion of our Christian forefathers, who—in the midst of manifold and malignant pestilences, one of the most terrible of which seems to have been anthrax, the great plague of Justinian's reign raged for fifty years (A.D. 531-580)—did not hesitate to devote their service, and too often their lives, to the sick. And, to add to the horrors of the time of which I am speaking, the doom of the world was then impending: men's eyes were fixed upon apocalyptic visions of a hoary wicked and devastated world presently to perish in the crash of the Last Judgment. We shall not marvel then that even in the second century, and worse and worse in the third and onwards, superstition fermented upwards from the lower people to the more enlightened. Demonism is catching. The exorcist was divided, if at all, by a very fine line from the magician, the priest and the magician being divided chiefly by the rivalries of status and privilege. Yet a few voices of wisdom were heard. Ulpian was unwilling to admit exorcists as legitimate practitioners, saying as follows:—"Si incantavit, si inprecatus est, si, vulgari verbo inpostorum utar, exorcizavit, non sunt ista medicinae genera: tametsi sint qui hos sibi profuisse cum predicatione adfirmant."[1] And this refusal of earthly therapeutics was intensified by the teleology which, inherited from Galen, culminated perhaps in Jerome who, as a logical teleologist, said summarily—"Everything is created for mankind. If a creature is not wanted for food it must then be wanted for medicine:" and accordingly he gives a long list of animal preparations thus intended by God for the healing of men: of such are viper's flesh, the gall of hyena or eagle, dog's dung, goose fat, blackheaded maggots, and so forth: though in these paragraphs he gives by the way a very interesting and far more useful record of the foods of various nations. The crudest teleological glosses thus became universal: the normal period of pregnancy to correspond with the number of the Decalogue must be ten months: the male child must be carried a shorter time than the female because Adam was born before Eve, and so on. I remember to have read somewhere in one of these fathers of the church that, as an illustration of the glory of creative power in the adaptation of means to ends, he discussed the anatomy of the nose, of which, as he observed, the upper part is indeed hard and bony, but the lower moiety soft and cartilaginous so as to lend itself to the human fingers, a convenience which in the daintiness of modern manners may not at once be obvious to my hearers. So we perceive that the evolutionary teleologists of our day are but nibbling at the subject.

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[1] Ulpian. Dig. L. XIII. c. i. § 3, quoted Harnack, *loc. cit.*

(*To be concluded.*)

DILATATION OF THE STOMACH.[1]

By A. ERNEST MAYLARD, B.S., F.R.F.P.S.G.,
Surgeon to the Victoria Infirmary, Glasgow.

With *X*-ray Photographs Illustrative of the Subject,

By JAMES R. RIDDELL, F.R.F.P.S.G.,
Medical Electrician to the Glasgow Royal Infirmary.

Ladies and Gentlemen,—In fulfilling the obligation under which you have placed me, by honouring me with the Presidentship of this old and distinguished Society, to deliver an address, my difficulty has not been less—indeed, I would fain deem it more—than doubtless was that of my immediate predecessors in the chair, in selecting a suitable subject with which to approach you. Dr. Freeland Fergus, whom I have the honour to succeed, dealt in a masterly way—in a way, I venture to think, no other man in our profession could possibly better—with "The Origin and Development of the Glasgow School of Medicine." Prior to Dr. Fergus was the much valued Secretary of the Society, Dr. Walker Downie, who was justly honoured, on the relinquishment of his secretarial duties, by being elected President. None of you, I think, will fail to remember the exhaustive and very interesting account Dr. Downie gave us of the early history and progress of the Society. The excellently bound copies of these addresses, which both

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[1] Presidential address delivered before the Glasgow Medico-Chirurgical Society, Friday, 3rd October, 1913.

Dr. Downie and Dr. Fergus respectively presented to the members, will remain cherished souvenirs and valuable works of reference for all time to come.

Thus, ladies and gentlemen, my limitations in the choice of a subject are practically bound by something strictly professional and technical, and my only regret is that in selecting one, I have been unable to find that which would appeal with equal and universal interest to every member of the Society, as was the good fortune of my immediate predecessors. I felt, however, that the defects of my contribution would, in a certain degree, be extenuated by selecting such a subject as "Dilatation of the Stomach," for it would at least be likely to be one that would interest by far the larger proportion of the members: for general practitioners, physicians, and surgeons alike are all familiar with the symptom, though all may not be equally cognisant of its import.

If you will allow me, therefore, I should like, in the short time at my disposal, to discuss some of the salient features associated with this condition. First, let me make it quite clear what I mean by a dilated stomach, or, as it is technically termed, gastrectasia.

There are considerable variations in what may be called the normal dimensions of the stomach, and for this reason, therefore, it is right before considering the purely pathological enlargement of the viscus to take into account certain facts both anatomical and physiological which, unless duly weighed and recognised, would complicate the discussion.

Pfaundler,[1] in a paper upon "Magencapacität und Gastrektasie," in the *Bibliotheca Medica*, deals with the development of the stomach during the early years of life. It is not until the third decade that complete growth is reached. The pyloric aperture, which, as I shall later show, plays such an all important part in the subject of gastric dilatation, measures at birth two centimetres in circumference. For each month up to twelve months the average increase is at the rate of about 0·1 cm., so that at the end of the first year the circumference of the aperture is about 3·3 cm. After the first year the increase takes place much more slowly until it reaches its maximum of 6·5 cm. in the third decade. These anatomical facts suggest that, as in all other parts of the body, we may have variations due to increased or diminished growth: that megastria or megalogastria—as

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[1] Pfaundler, "Ueber Magencapacität und Gastrectasie im Kinderalter," *Bibliotheca Medica*, Stuttgart, p. 32, 1898.

Ewald expresses it—may be encountered where no pathological lesions exist; or that an unusually small stomach exists as the result of some natural check in the growth of the viscus. This latter consideration, as it affects the pyloric aperture, will be referred to later, having, as it may, a causative relation to pathological dilatation.

The conception originally entertained of the shape of the stomach has in recent years undergone very material change. Based mostly upon what was found in the *post-mortem* and dissecting rooms, the old text-book representations showed a viscus of almost fixed configuration (see Fig. 1); and, on the fallacious reasoning of *post hoc ergo propter hoc*, mistaken indications were laid down for the clinical signs of the situation and dimensions of the organ. The developments of modern surgery, and the still more graphic and realistic representations obtained by means of x-ray photography, have both lent their aid in giving us a much truer conception of the organ in both its anatomical and functional relationships. From being considered a sort of permanently dilated viscus of fixed shape, we now know it to be an organ of very varied dimensions, and sometimes extremely limited in its location. I do not think this has been better shown than by some photographs taken by Dr. Lewis Gregory Cole,[1] of the Radio-Surgical Department of Cornell University Medical College, New York. These Dr. Riddell proposes to show you, with other illustrative pictures, on the screen, at the conclusion of my remarks. You will at once see from these pictures (see Figs. 2, 3, 4, and 5) that the stomach presents much more the appearance of a tube than a bag; and, further, that when the viscus is in action, that is to say, when peristalsis takes place, one is reminded much more of a portion of the intestinal canal than of an organ possessed of any peculiar and specially complicated action. As a matter of fact, the old description given of a supposed normal stomach was just that which would now be regarded as an organ that had undergone somewhat advanced changes, mostly as the result of obstruction at its outlet. While, however, the chief features in gastric contraction are the peristaltic waves passing from the cardiac to the pyloric extremity, there is, as pointed out by Cole in his illustrative photographs, a distinct general diastole and systole rendering the gastric motor phenomena not quite as simple as might at first sight appear.

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[1] Lewis Gregory Cole, *The Value of Serial Radiography in Gastro-Intestinal Diagnosis*, Chicago, 1912.

With these few necessary remarks upon the normal viscus, let me now approach the pathological side of my subject, which, as already indicated, concerns dilatation of the stomach.

I am tempted, in the first place, to ask the question, Is there such a condition as uncomplicated dilatation of the organ? Can we have a dilated stomach *per se*: an idiopathically enlarged stomach apart from an abnormally large viscus? It is common enough, in practice, to hear men say that their patient is suffering from a dilated stomach: and to deal with the case as if this were the sole condition to be considered and treated. But do we really know of any disease of the stomach that could cause it to dilate apart from some obstruction to the outflow of its contents? It is possible that one enormous meal, or the more or less constant ingestion of large quantities of food or fluid, as in the chronic alcoholic, may so over-distend the viscus that its parietes become temporarily paralysed; just as a similar muscular viscus like the urinary bladder may become temporarily paralysed and dilated by reason of prolonged retention of a large quantity of fluid. But exclude these somewhat exceptional conditions, are there any that remain that will admit of a stomach being dilated otherwise than through mechanical obstruction? It is conceivable that inflammation of the mucous membrane—a catarrh—might so paralyse the underlying muscle fibres — for an inflamed muscle is a paralysed muscle—that the walls would fail to contract, and thus losing their tonicity, allow of dilatation. But I venture to doubt whether a simple chronic gastric catarrh, any more than a catarrhal colitis, leads to dilatation of the involved region. When dilatation really is present, it is much more probable that the catarrh is a consequence and not a cause: that there is some obstruction present which has indirectly given rise to the inflamed condition of the mucous membrane. I may be expressing an opinion based on a too limited knowledge of this particular class of cases; but, in venturing on such a statement, I do so from the experience of a number of cases that have come under my own observation. In operating, I rarely failed to find obstruction of some kind as the cause of dilatation. The exceptions, too, have been of quite a different nature. They have arisen from adhesions, which, by unduly anchoring some part of the visceral parietes, have interfered with efficient contraction and complete emptying of the organ.

The motor phenomena of the stomach are exercised through the vagi. Whether it is possible for any inhibitory influences to be conveyed through these nerves of such a nature as to cause a paretic or paralytic dilatation, I am unable to say. I should, however, deem it doubtful, unless accompanied with other and more striking results than those manifested by the stomach.

It is often said that dilatation of the stomach occurs in some cases of nephroptosis. I believe it is so. The cause, however, is probably not physiological but purely mechanical, for the dropping of the viscus, carrying with it a portion of the duodenum, kinks the canal and obstructs the outflow from the stomach; or it may be that it unduly presses upon the bowel.

If I added yet another argument against the theory of non-obstructive—or may I term it idiopathic—dilatation, it would be that we are unfamiliar with such a condition in any other part of the alimentary canal, or indeed of any other viscus which possesses muscle parietes. So-called idiopathic dilatation of the colon is so indefinite in its etiology that it is by many regarded as primarily the result of obstruction. We know of no such condition as non-obstructive dilatation of the oesophagus, small intestine, rectum, gall-bladder, or urinary bladder. Lastly, the condition known as acute dilatation of the stomach, which occasionally follows certain abdominal operations, is regarded by many as having its origin in obstruction, from the fact that relief is usually and best afforded by emptying the organ of its contents.

What I am anxious to bring out in these few critical observations is, in the first place, that when dilatation of the stomach is observed, it must be regarded merely as a symptom, for which a cause should be sought; and, in the second place, that in by far the larger proportion of cases the cause will be found to be some form of mechanical inhibition to the normal outflow of the gastric contents. If the condition were more frequently regarded from this aspect, I feel sure that many a patient might be saved months, and even years, of ineffectual dietetic and medicinal treatment by the timely intervention of surgery.

Much of the difficulty in arriving at a correct diagnosis in the early stages of the disease arises from the fact that so many cases temporarily improve under certain forms of treatment; but such improvement soon disappears when the special treatment employed is discontinued. The reason for this I shall allude to presently.

Basing, then, the cause of dilatation on some form of obstruction, how does it lead to the somewhat varied and misleading symptoms with which it is so frequently associated?

The first result of any check to the normal effort of expulsion is to increase that effort; and in the case of all viscera with muscle parietes, increased contraction is produced. But increased muscle effort means increased muscle development: and instead, therefore, of a hollow viscus becoming augmented in capacity, it really becomes diminished. This is well and much better illustrated in the case of stricture of the urethra. As is well known, the obstruction caused by a urethral stricture is extremely slow and gradual in its process of development; and in as much as the material to be ejected is of a simple watery consistency, it is rare for the bladder ever to assume a chronically dilated condition. Instead, indeed, of a dilated viscus we find a contracted one with sometimes enormously thickened parietes, due to compensatory hypertrophy of the muscle tunic. Now, in the case of the stomach, a precisely similar process takes place in the initial stages of obstruction; but, as the nature of the material to be ejected is of a very different consistency, a period is soon reached when the hypertrophied muscle parietes fail to exercise sufficient power to overcome the obstruction: and, then, worn out by their continued efforts, they, at last, give way to complete relaxation. When once this happens dilatation commences: and the capacity of the viscus remains increased until such time as the muscle has recovered from its exhausted condition, and is again fit to renew its efforts at expulsion, and overcome the obstruction. If this phase of the initial stage of pyloric or duodenal obstruction is sufficiently well understood, it becomes a very simple matter to appreciate the many clinical difficulties that arise in interpreting aright the vagaries of partial obstruction in its many and varied degrees of severity. For instance, if you feed a patient in the early stages of his trouble with some readily digestible diet, that is to say, with material that easily makes its way through the abnormally narrowed orifice, the stomach will overcome the obstruction, and you will have no or but slight symptoms that will suggest gastric disturbance, much less gastric dilatation. But immediately the patient returns to a liberal and ordinary diet, a recrudescence of the symptoms at once appears: or, put the matter in another form, the stomach like other parts of the body is liable to be affected by anything which depresses the system or constitution as a whole. Thus, it is not uncommon for a patient suffering from partial or slight obstruction to complain that, when feeling overtired or run down in health, his gastric symptoms become augmented; and that as his general condition improves—as, for instance, the result of a week's rest from his customary work spent possibly holidaying—these symptoms disappear, and he labours under the belief that he is cured. When, however, he resumes his customary work and mode of living, his gastric troubles again become manifest. I cannot, perhaps, bring this more vividly before you than by narrating a case which well illustrates what I have just said, and is a type of a very large class of cases with which, I am sure, many here have had some experience. The following occurred in the practice of my friend, Dr. Cullen, of Alexandria, Dumbartonshire:—

Dr. Cullen wrote to me that he had a man under his care, aged 30 years, who was seized periodically with attacks of epigastric pain occurring every few months, but varying in severity and duration lasting from two or three to ten days at a time. These attacks had been more recently coming on at gradually lessening intervals. Dr. Cullen stated that he believed his symptoms were gastric, for the reason that he had, on occasions, been able to elicit signs of dilatation. He asked me to take the man under my care in the Infirmary. At the time there were no vacant beds in the ward, so that a week or two elapsed before he was written for. It was then ascertained that he had gone for a holiday. Later I received a second letter from Dr. Cullen saying that his patient had returned from his holiday, and was feeling so well that he was not willing to come into the Infirmary. He further asked me what I thought, under the circumstances, of the nature of his case, and what I would advise? My reply was—based on an experience of similar cases, that if the man was really suffering from pyloric obstruction, possibly not of a very severe type, his symptoms were simply in abeyance; that the improvement would only be temporary, and that as soon as he returned to his customary work and mode of living, he would begin to be troubled again with his stomach. It was not long after this that I again received a letter from Dr. Cullen asking me to take his patient into the Infirmary, for his condition was just as bad as ever. He was accordingly received into hospital. He was a healthy-looking, well-made man, with no complaint beyond that of pain and discomfort after food. His earlier history suggested that some three years previously he had had symptoms indicative of duodenal ulceration. Kept in bed and carefully dieted, all his symptoms disappeared. No evidences of gastric dilatation could be made out, the stomach evidently being able to empty itself under hospital régime. Operation was performed. A constricted pyloric orifice was found, the result of a healed chronic ulcer. A posterior gastro-jejunostomy was executed, and the man made an uninterrupted and permanent recovery.

The point, you will see, is very clearly brought out in this case of how variable is the existence of the symptom of dilatation: but its occasional presence is quite sufficient to make obstruction the almost certain cause of the patient's gastric symptoms, which, as in this case, may be solely limited to pain after food.

In nearly all cases of obstruction there follows, sooner or later, retention of the ingesta, and by that I do not mean simply delayed emptying, but a lodgment of material that remains sufficiently long to undergo fermentative changes. Now, if we prevent this by the timely removal of these possible irritative products, we so improve the motor functions of the viscus that normal contraction ensues, and all indications of dilatation temporarily disappear. Thus, it is quite easy to be misled into the belief that some real and permanent good has been effected by our system of lavage: but one is soon disabused of any such belief by a recrudescence of the symptoms as soon as the washing-out is, for a time, desisted from.

But it is quite possible for temporary improvement to be brought about by another method of stimulating the contractile power of the stomach other than that which involves removal of the stomach contents. I mean by direct stimulation of the gastric walls, either by massage through the abdominal parietes, or by means of electrical treatment. Here again, however, the improvement is only temporary: for recurrence of the symptoms ensues as soon as the remedial measures are stopped.

From the type of cases which I have just been describing, you will have gleaned that dilatation of the stomach is an irregular symptom occasionally present and occasionally absent, but none the less practically pathognomonic of obstruction.

It is interesting to note how, as the obstruction begins to tell in its effects, dilatation develops. Although the circular muscle fibres are more abundant and best developed as the pylorus is approached, and, therefore, the strongest in their propulsive efforts at expulsion, it is here that dilatation begins first to manifest itself. The whole driving force of the stomach being directed towards making the contents pass the obstruction, the pressure comes to be felt most in that part of the organ just proximal to the outlet, that is to say, that part which is called the pyloric antrum. This becoming enlarged is carried downwards and outwards to the right of the middle line. Although this dilatation is most usually general and uniform, I have on several occasions met with distinct pouches, sometimes no larger than would have received a hazel-nut. It implies a protrusion of the nature of a hernia, although embracing all the tunics of the viscus. This small local condition would not be diagnosed prior to operation: but the more general type becomes extremely significant when detected, even only as an intermittent symptom, that is to say, before general and permanent dilatation takes place.

When the disease has advanced to a later stage, dilatation no longer becomes an intermittent symptom, but a permanent one: no longer localised at the pyloric antrum, but universal, involving the whole body of the viscus. There is little or no difficulty at this stage in recognising the condition, or in explaining the causes upon which it is dependent. When once the muscles of the gastric parietes have lost their power of contracting, the strength of the walls which remains is insufficient to prevent gradually increasing dilatation, for simple elastic force cannot overcome what active muscular energy is alone capable of accomplishing. When, then, this stage has been reached, there is nothing for it but a passive and uninterrupted increase in the capacity of the viscus. To what extent this may go is well illustrated in a case which came under my observation a few years ago. The patient was a man, aged 66 years, under the care of Dr. George Halket, with whom I saw him in consultation. He was a man of particularly bright and cheery disposition, and not in the least disposed to regard his condition with any degree of gravity. His story was that up to three weeks previously he had taken his food well, and had been actively engaged at his work. At this time, however, his bowels commenced to be very costive; and he employed enemata, which removed, as he said, "little round balls." He complained of no abdominal pain, merely discomfort from the great distension which had gradually increased, and the difficulty he had in obtaining an evacuation. For the purpose I have in view, I need not lengthen the history of the case, but will shortly state what was found on opening the abdomen. Immediately the peritoneal cavity was entered, what appeared to be an enormous, tense, thin-walled cyst presented, for all the world like an ovarian cyst. When tapped, a thin inky-like fluid escaped, very sour to the smell, with flakes of curdled milk floating through it. Thus, it was at once evident that we were dealing with an enormously dilated and distended stomach. After the withdrawal of eleven pints of this fluid, the walls of the supposed cyst contracted, and presented the unmistakable appearance of being the parietes of the stomach. This is the most remarkable illustration of extreme gastric dilatation that I have ever met with personally or in literature.

CAUSES OF OBSTRUCTION.

Only a few words will suffice to deal with the various causes of obstruction. They may be connected with the duodenum, the pylorus, or the body of the stomach: they may be innocent or malignant, that is to say, they may be of a simple inflammatory character, causing constriction from within or without, or the result of morbid growths. Obstruction may also be due to kinking of the canal—the result of simple ptosis of the viscus or from its being dragged down by adventitious adhesions contracted with parts in the lower abdomen: or it may be that pressure from a displaced kidney narrows the channel. Two other causes of obstruction are (1) narrowing of the pyloric aperture, the result of congenital hypertrophy, and (2) a check, for some unknown reason, on the normal progress of development. I should like to draw more particular attention to this latter cause, for I believe it to be one insufficiently recognised, and by no means of infrequent occurrence. You will remember that in my earlier remarks I referred to Pfaundler's investigations into the growth of the pyloric aperture during the early period of life, that the calibre of the canal does not reach its fully developed dimensions until the third decade of life, when the circumference measures about 6·5 cm. We have abundant evidences in other parts of the body of the effects of defective structural development, only not necessarily associated with functional derangements. A small heart or liver, diminished hands or feet, result in no material loss of bodily health or vigour, but should such defects or deficiencies diminish the size of any of the orifices which serve as outlets for a natural discharge, then results are likely to accrue consequent upon the obstruction. Gynæcologists will tell you that they are familiar with such conditions as abnormally narrowed orifice of the hymen and of the uterine os. Such narrowing is also met with in some parts of the intestinal canal, and in the cystic duct of the gall-bladder: even the oral and anal apertures vary much in size, as can be easily observed. But in none of these—with the exception, perhaps, of the female genital organs—are symptoms so likely to arise as in the case of a congenitally narrowed pyloric aperture. The obstruction which such a narrowing offers to the ejection of the stomach contents will, in proportion to the size of the aperture and the general muscular vigour of the viscus, sooner or later, evoke gastric symptoms. Attention was first directed to this condition by Landerer,[1] in a paper by Maier in *Virchow's Archiv*, and has, in recent years, been supported by Dr. William Russell,[2] of Edinburgh. My own attention was first drawn to it some years ago by meeting with cases that presented symptoms of pyloric obstruction, but where, on operation, nothing could be found except an abnormally narrowed pyloric aperture. I have dealt so fully with this subject in previous publications that I shall not further enlarge upon it here.[3] I introduce it merely to emphasise the fact that there is a class of cases, mostly among young adults, who, while healthy in every other respect, suffer from periods of indigestion, and in whom evidences of intermittent attacks of dilatation of the stomach are met with.

There is one other possible, though I believe improbable, cause of obstruction, to which reference should be made, and that is spasm or spasmodic contraction of the pylorus. It is a condition which has been much talked about, and especially in association with hyperacidity. I believe we know very little about spasm of the pylorus, and it has gradually sunk more and more into the limbo of doubt and obscurity since operative exposure of this region has so frequently revealed organic obstruction.

DIAGNOSIS.

The question of diagnosis is one of no little difficulty, and more particularly in the earlier stages of the condition. Remember that we are dealing with a symptom, and not with the diagnosis of obstruction of which it is only one indication. Text-books in the past have laid down various different signs to be looked for and elicited, but many of

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[1] Landerer, quoted by Maier, *Virchow's Archiv*, Band CII, S. 413.

[2] W. Russell, *British Medical Journal*, 1908, vol. ii, p. 68.

[3] Maylard, *Clinical Society's Transactions*, London, 1904, vol. xxxvii, p. 63; also *British Medical Journal*, 1904, vol. i, p. 417, and 1908, vol. ii, p. 71; also *Practice and Problem in Abdominal Surgery*, 1913, p. 142.

DESCRIPTION OF ILLUSTRATIONS.

Fig. 1.

Normal stomach, as depicted in old anatomical text-books. (Gray.)

Fig. 2.

Normal stomach, as revealed by radiography—*A*, bell of air always present at fundus; *B*, peristaltic waves; *C*, "cap," or commencement of duodenum. (After Groedel.)

Fig. 3.

Normal stomach, with greater curvature reaching just below the umbilicus. *B* and *C* as in Fig. 2. (J. R. Riddell.)

Fig. 4.

Hypotonic stomach, fairly normal, but peristalsis slight, and greater curvature reaching about 2 inches below umbilicus; contractile power of parietes sufficient to keep the stomach contents in a perpendicular column: lettering as in Fig. 2. (J. R. Riddell.)

Fig. 5.

Series of radiograms, illustrating the gastric systole and diastole. Beginning at the top and reading down left and up right side, the stomach shape is seen through a complete cycle, beginning and ending in diastole. (Lewis Gregory Cole.)

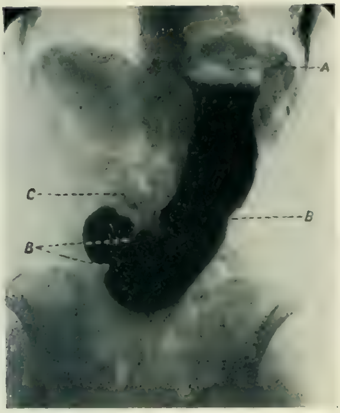

Fig. 2.

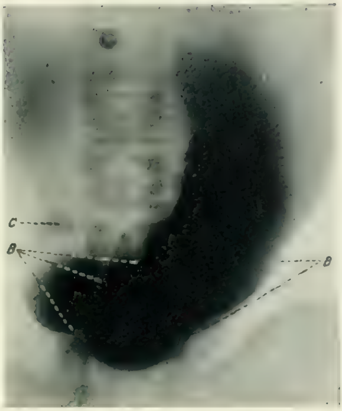

Fig. 3.

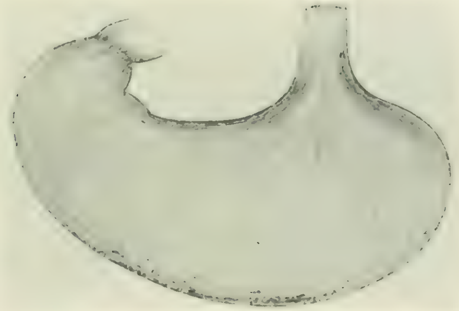

Fig. 1.

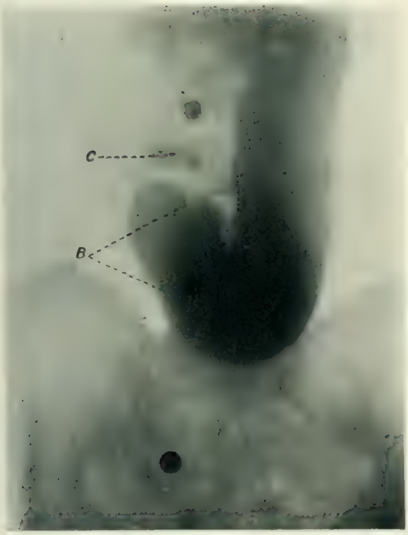

Fig. 4.

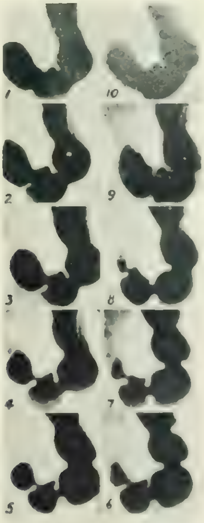

Fig. 5.

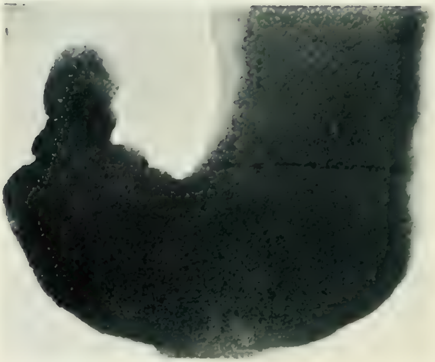

Fig. 7.

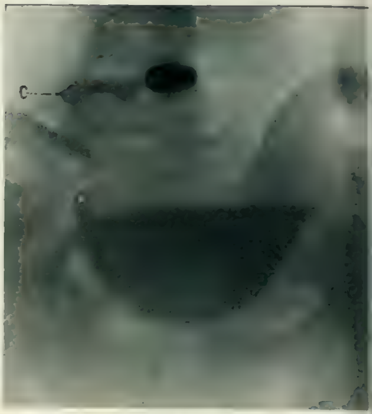

Fig. 8.

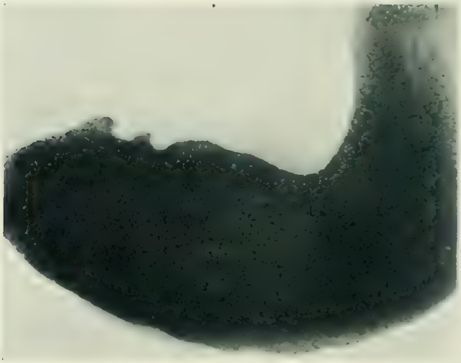

Fig. 6.

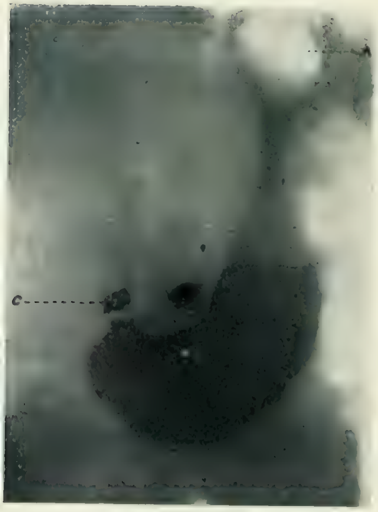

Fig. 9.

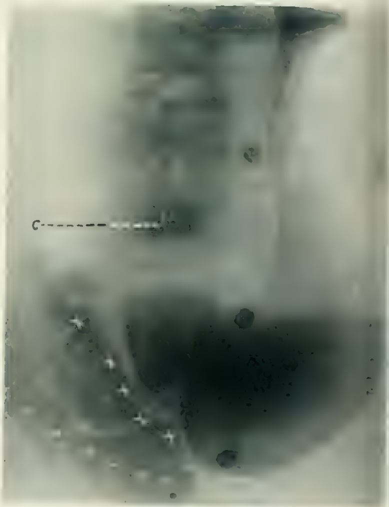

Fig. 10.

DESCRIPTION OF ILLUSTRATIONS.

FIG. 6.

"Prognathian, or under-shot dilatation of the stomach from pyloric obstruction." (L. G. Cole.)

FIG. 7.

"Atonic dilatation of the stomach from pyloric obstruction." (L. G. Cole.)

FIG. 8.

Extreme atonic dilatation of the stomach from pyloric obstruction. The radiogram was taken thirty hours after the opaque meal, and shows the greater curvature of the stomach in the pelvis. The upper surface of the meal forms a horizontal line; the pylorus, *C*, is close to the umbilicus. (J. R. Riddell.)

FIG. 9.

Atonic stomach, showing bell of air at the fundus, *A*, and duodenal "cap," *C*. Absence of peristaltic waves. The stomach has not enough contractile power in its parietes to keep the meal in an upright column, so that the walls above the meal fall together. (J. R. Riddell.)

FIG. 10.

Atonic dilated stomach, with greater curvature in the pelvis. There is absence of any peristalsis. At the upper part some of the opaque meal is seen just entering the stomach. The radiogram illustrates the appearances after the "double" meal of Haudek. The first is given six hours prior to the *x*-ray examination. It is seen to the left of the figure lying in the cæcum, ascending and transverse colon; some small masses are also seen high up on the right side at the splenic flexure. The second meal is given at the time of examination. From the position of the first meal the motility of the stomach is judged; then the second is given, when the manner of filling, peristalsis, shape, &c., are observed; and thus the entire examination is completed at one sitting. (J. R. Riddell.)

these have been exploded by the revelations of x-ray photography. Thus, we are told that a stomach that reaches down to and sometimes beyond the umbilicus is necessarily a dilated one: but, as will be seen presently, a perfectly normal viscus may occupy these positions. The symptom of succussion or splashing, also, is a very variable one. What it really means, of course, is simply gas and fluid in the stomach, and this may exist under perfectly normal conditions within four hours after a meal. Usually after the lapse of this time the gas and fluid will have escaped out of the stomach; and the gastric walls will have contracted upon whatever more solid materials remain. When, however, this period of time is exceeded, it generally means unduly delayed emptying, and probably some accompanying dilatation. Percussion alone, or in conjunction with auscultation, is not of much service in determining the existence of dilatation, except in advanced cases, when the area of tympanicity may be found to be largely increased. Even in these cases very varied results may be obtained, for the position of the patient, whether in the vertical or the horizontal, and the quantity of the gas in the stomach at the time of the examination, very materially affect the area in which tympanitic resonance may be detected.

Two of the most striking symptoms indicative of dilatation are the quantity and character of the vomitus, and the result of mechanical distension. When a patient vomits large quantities of brownish, sour-smelling material, in appearance like thin porridge, you may be certain that, apart from merely prolonged retention, there is marked dilatation. I know no more suggestive sign. It may be equally well demonstrated by lavage, when the same typical material may be withdrawn. With regard to artificial distension by gas, there is no mistaking the effect produced on a truly dilated viscus. As air is pumped in with an ordinary Higginson's syringe—which well answers the purpose, the patient being in the recumbent position—the stomach is seen to rapidly rise, and in proportion to the degree of distension will this rising be observed in the epigastric, umbilical, and right hypochondriac regions. This passive distension indicates an atonic condition of the muscle parietes, for unless the stomach has lost to a considerable degree its power of contraction it very soon resents this hyper-distension, and, contracting upon the forcibly-introduced air, gives pain and discomfort to the patient, producing at the same time only a limited area of tympanicity in the epigastrium.

But our means of diagnosis have recently been considerably added to by the employment of x-ray photography. And I am much indebted to Dr. James Riddell for so greatly adding to the interest and instructiveness of my address by consenting to show some skiagrams of the stomach bearing on the subject under discussion. I may be permitted, however, to anticipate in description that which his pictures will demonstrate on the screen, by stating that skiagrams taken after the ingestion of bismuth meals give very clear and instructive information in cases of marked obstruction. When obstruction has not led to very pronounced dilatation, the pyloric half of the organ assumes a transverse position, and presents the appearance described by Cole as "prognathian or undershot" (see Fig. 6). In advanced cases the meal is seen to lie in the lower part of the viscus, due to the fact that the parietes of the stomach have lost all power to contract upon the contents, so that these latter simply gravitate to the most dependent part of the organ. The photographs of these conditions present very striking pictures, leaving no doubt regarding the state of the viscus (see Fig. 8).

PROGNOSIS.

It is of some interest and importance to trace the clinical course of events in cases of dilated stomach which are treated solely by conservative or non-surgical measures.

It would, I think, be almost right to say that once obstruction, always obstruction; and this rule would be none the less true if, on very exceptional occasions—such as I shall briefly indicate shortly—a case is met with where the obstruction disappears. I have already stated how much improvement follows careful attention to diet and lavage. But this, as a rule, is only temporary, and the patient must be prepared to live the rest of his life as an invalid, with his head, metaphorically, in his stomach, constantly thinking of the precautions he must take, and the remedial measures he must employ. It is in very many cases a wretched existence, for the patient's strength is increasingly enfeebled, and he is totally debarred from many of the pleasures of life.

But there is something more than this in the progress of these cases. Often, prior to a period of dilatation, the stomach parietes, in making an extra effort to drive out the contents, undergo a sort of spasmodic contraction. This causes great pain, and a patient who suffers from these often excruciating attacks of gastralgia is prepared to accept any treatment that will hold out the prospect of preventing their repetition.

Another risk, and a serious one too, lies in the wake of those sufferers whose stomachs have become, more or less, permanently dilated. Gastric tetany is an occasional result, and a very fatal one. Fortunately, we but rarely see this condition nowadays, for the cases are, with increasing frequency, brought under surgical treatment before the later stages at which tetany appears have been reached. What is the actual cause of gastric tetany is not known, but it is thought probable that it may be due to some toxine produced among the fermentative products of the retained ingesta.

There is no limit, except that of the capacity of the abdominal cavity itself, to the size which a stomach may attain. I have already narrated a case from which I removed eleven pints of fluid; and I can recall another case which I saw some years ago in consultation with Dr. Alexander Napier, where the stomach seemed to fill the whole abdomen, reaching down to the pubes. This case illustrated the last stages of the complaint. The patient was emaciated to a shadow, and so weak and exhausted that I considered operation of no avail. The following day, I think it was, he died. The surgeon was thus spared the unjust stigma of having been the means of causing death.

I need hardly say that when carcinoma is the obstructing cause which has led to dilatation, death may result from one of the many complications incident to that disease, the dilatation playing but a subsidiary part in the fatal issue.

If only for the curiosity of the thing, I may relate, as I promised to do just now, a case of natural cure. It came under the personal observation of Dr. Thomas Bradshaw,[1] who described the case in full in his address on "Intermittent Pyloric Obstruction," published in *The Lancet*. I curtail considerably the history therein given.

The patient was a lady, aged 64 years, who had for eight years lived on "a pint of fluid, and two or three crumbly biscuits per diem." Every eight or twelve months she had an attack of complete pyloric occlusion, each one of which it was thought would prove her last. She wore an abdominal belt, which seemed of some service in supporting the stomach. Notwithstanding her condition, she retained her mental and bodily vigour. When spending the summer at the seaside, she began to suffer from a peculiar hallucination. She told her family that her doctor had said that she might eat anything she liked, and insisted on consuming meat and vegetables in considerable quantity. The result was that an attack of hæmorrhage took place. However, she persisted with the new and enlarged dietary, and instead of getting worse she improved; and after being confined for eight years to a daily allowance of a pint of liquid, she now found that she was able to take ordinary food in normal amounts. She began to put on flesh, and in the course of a couple of years was restored to perfect health, with a complete freedom from all previous gastric symptoms. In commenting on the case, Dr. Bradshaw said—"One often feels that Nature is a good physician, but a bad surgeon; but here a beneficent process of ulceration, or of extension, had brought about a complete and lasting relief, which could scarcely be improved on by the knife of the most skilful surgeon."

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[1] T. R. Bradshaw, *The Lancet*, 1910, vol. ii, p. 537.

Interesting and instructive in a way as is this case, I hardly suppose any would wish to utilise it for the purpose of discouraging the adoption of modern methods of treatment, which may be deemed as certainly beneficial in their results as those of Nature are doubtful and dangerous.

I trust, therefore, the foregoing remarks upon the question of prognosis has led to the one and only inevitable conclusion that dilatation of the stomach, however manifested, can but lead in a very large proportion of cases to slowly and surely advancing invalidism, accompanied with such complications that life, sooner or later, will be endangered. We are thus finally brought to the only sure and certain way of effectually dealing with these cases by surgical intervention.

TREATMENT.

I shall not detain you long with what I have to say regarding the various methods employed by the surgeon in dealing with cases of dilatation of the stomach. Before we fully appreciated the frequency and all-important part which obstruction of some kind played in the rôle of dilatation, we were apt to consider the enlarged viscus as simply the result of atonic dilatation, and, in consequence, we fell into the trap of attempting to treat what was really only a symptom regardless of the true cause upon which it depended. Thus, a big stomach was a sufficient indication that it must be lessened in size, so we infolded or puckered up the parietes —performed, as it is termed, gastrorrhaphy. This often in certain cases seemed to do good, probably from the fact that by lessening the capacity of the viscus it rendered it easier for the parietes to force the gastric contents past the obstruction. It is, however, extremely exceptional for this operation to be performed now. We recognise that obstruction is at the bottom of the trouble: and whatever is done must be with the object of efficiently overcoming this. At present, gastro-jejunostomy is the method most in vogue for circumventing this difficulty, but cases have to be dealt with according to the nature of the obstruction. Thus, when we find that external adhesions have led to constriction or kinking of the canal, their separation (gastrolysis) may sufficiently liberate the part to allow of an unimpeded outflow from the stomach. Where we have reason to believe that a mobile kidney either presses upon or kinks the duodenum, and is the cause of the dilatation, our treatment is naturally led to the fixation of the dislocated viscus.

Carcinoma of the pylorus calls, as a rule, for much more extensive treatment, for not only must we consider the dilatation as simply the result of an obstruction, but we must think of the obstruction as of such a serious nature that it must itself be, if possible, totally removed. When, therefore, extirpation of the disease seems feasible, we have to add subtotal gastrectomy to the operation of gastro-jejunostomy.

In cases of simple narrowing of the pyloric aperture, the result of defective development—a condition which I have described as "Congenital narrowness of the pyloric orifice"—I prefer Finney's modification of gastro-duodenostomy. The advantage of this method, whenever it is capable of being executed—whether for this particular condition, or for others of a similar simple nature, the result of cicatricial contraction—lies in the fact that we merely enlarge the already narrowed outlet, without in any material way disturbing the normal physiological functions of the duodenum. The one drawback that it possesses is that it is sometimes difficult to obtain sufficient freedom of the pylorus to effect easy anastomosis, for it is essential for the proper performance of the operation to freely apply the first part of the duodenum to the pyloric antrum of the stomach.

With regard to other methods directly acting upon the pylorus, I think I may say that Loreta's operation of forcibly stretching the constricted canal (pylorodiosis), and the Heinecke-Mikulicz operation of pyloroplasty—that is, dividing the pylorus in one direction and uniting it in another—are rarely practised now-a-days. How successful are the various methods now employed for the treatment of dilatation, the result of obstruction, is best testified to by the excellence of both the immediate and remote results. For, in the former, the mortality after operation, in experienced hands, does not exceed 2 or 3 per cent; while, in the latter, there cannot, I think, be anyone present here to-night who has not seen a life of perpetual gastric misery changed into one of permanent gastric joy.

ON THE TREATMENT OF HÆMOPTYSIS IN PULMONARY TUBERCULOSIS.

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THE occurrence of haemoptysis in a case of pulmonary tuberculosis always gives rise to some anxiety in the mind of the physician, and causes more or less alarm to the patient and his friends. Even when the blood is small in amount it demands careful attention. The amount of blood may vary very much. There may be only a slight pink staining of the sputum, or a few streaks of blood; or the sputum may be mixed with a considerable amount of blood, and, finally, large quantities of pure blood may be coughed up.

When a patient reports that he is spitting blood, the first thing is to ascertain the source of the blood, and this enquiry should be conducted with great care. In this way a false alarm and much unnecessary treatment may be avoided. Patients with soft spongy gums may spit blood after brushing their teeth. And some persons in cleansing their mouths in the morning get rid of a dirty pinkish "glut," which seems to be an exudation from the mucous membrane of the buccal cavity. And a person with an inflamed sore throat may have some blood in his spit after "hawking" or clearing the throat violently. Again, in patients with inflammation and catarrh of the Schneiderian membrane, blood-stained mucus may drop into the mouth from the posterior nares, and be spat out, and a similar occurrence may take place in connection with an attack of epistaxis.

It is well to remember that malingerers may produce a bloody spit by pricking the gums with a needle or other sharp instrument. And it is further to be borne in mind that severe hæmoptysis may arise from the presence of a foreign body which has dropped into the respiratory tract and become impacted in a bronchus, thus giving rise to ulceration and hæmorrhage.

Finally, we must not forget that hæmorrhage from the lung may be due to cardiac disease: to mitral regurgitation. And in a case of pulmonary tuberculosis we may have a lesion in the lung as the source of hæmorrhage, but the tendency to hæmorrhage may be caused or aggravated by the presence of mitral regurgitation.

Sometimes a question may arise between hæmoptysis and hæmatemesis. When blood comes from the stomach it is likely to be mixed with food, gives an acid reaction, and is liable to be altered in colour and appearance by the gastric secretions. Blood coming from the lungs is likely to be mixed with air, and may be accompanied by sputum, but still there are cases in which it may be difficult to make sure whether we are dealing with hæmoptysis or hæmatemesis. For example, a patient with hæmoptysis accompanied by severe cough may have retching and vomiting, and so the blood may be mixed with stomach contents. On the other hand, a patient with hæmatemesis may have the vomit mixed with sputa which have been swallowed, Still in the majority of cases we have little difficulty in distinguishing between hæmoptysis and hæmatemesis.

After these preliminary remarks I turn to the question of treatment, and the first thing to be done in this connection is to allay the excitement from which, in the majority of cases, the patient is apt to suffer, and to calm and reassure the friends. For this purpose a quiet and composed demeanour on the part of the physician plays an important part. Whatever his anxiety may be, it must be concealed by an air of cool and methodical attention to the treatment of the patient without any display of emotion, for patient and friends will be unconsciously influenced by his conduct and bearing, and it is fortunate that the physician can truthfully give the assurance that the hæmorrhage will probably soon yield to treatment, and that even alarming hæmorrhages are not necessarily fatal. It may be remarked in passing that some patients take the matter very coolly, and even display an indifference which is quite surprising. The room should be kept cool and well ventilated, and the patient should be kept as quiet as possible, and forbidden to speak. Excitable or over-solicitous friends should be kindly but firmly excluded from the sick-room. If the hæmorrhage is at all well marked (anything beyond "staining" or "tingeing"), the patient should be placed on bed or made to repose on a sofa. If the hæmorrhage is severe the patient should be properly put to bed with as little delay and as little disturbance as possible. He should have sufficient covering to make him comfortable, but should not be overloaded with bedclothes. His head and shoulders should be slightly raised, but his face should not be thrust forward by pillows pushed behind his head. It is a good plan to have the patient on a gentle slope by means of blocks of wood placed below the castors at the head of the bed.

A great variety of drugs and methods have been employed in the treatment of pulmonary hæmorrhage. I shall here deal with those of which I have had some personal clinical experience. But, in the first place, it is well to consider the *rationale* of our proposed treatment. What objects have we in view?

I think it is generally agreed that there are three things to be aimed at, viz., to reduce the amount of blood going to the affected part, to reduce the speed of the blood-current, and to increase the coagulability of the blood. With regard to the first of these indications, it seems pretty clear that we should try to bring about a contraction in the arteries supplying blood to the lesion from which the blood comes. One writer raises the objection that as the vessels involved in the affected area are probably diseased we cannot expect them to respond to the influences which would bring about contraction in healthy vessels. This, no doubt, is true as regards the parts of the arteries or arterioles actually involved in the diseased area, but if the proximal healthy portions of these arteries were got to contract, surely that would have a beneficial effect in diminishing the blood-supply in the region where the hæmorrhage was taking place. Be that as it may, it is to be feared, however, that attempts to control pulmonary hæmorrhage in this way are attended with doubt and uncertainty. If we could certainly and efficiently bring about contraction of the pulmonary arteries without inducing a similar reaction in the systemic arteries and arterioles we can scarcely escape the conviction that we would then have control over bleeding from the lungs, but if the agency which we employ brings about contraction of the systemic arteries and arterioles, it is evident that we shall thereby raise the blood-pressure, and increase the mischief in the lungs. For this reason it is not desirable to employ a drug such as ergot in the treatment of pulmonary hæmorrhage. It is better practice to bring about dilatation of the peripheral vessels by means of, *e.g.*, nitrite of amyl, and this lowers the blood-pressure in the lungs; but I shall return to this matter in dealing with drugs.

With regard to the second object we have in view, namely, the slowing of the blood-current, that is evidently a desirable thing and likely to facilitate coagulation at the seat of hæmorrhage, and we have means by which that end may be attained.

The third indication, increasing the coagulability of the blood, is no doubt an object much to be desired, but I am afraid not easy to attain.

I now propose to pass in brief review the various drugs and methods of which I have had some personal clinical experience in the treatment of hæmoptysis occurring in pulmonary tuberculosis.

In the matter of drugs I think there need be little hesitation in placing opium and its derivative, morphia, at the head of the list. These drugs meet many of the indications for treatment: they soothe the patient's nervous system and subdue excitement, thereby calming and slowing the cardiac action, and consequently diminishing the force and rapidity of the circulation. In this way the hæmorrhage is controlled, and the process of coagulation facilitated. The sedative influence also renders the breathing quieter and slower—a very important matter. It likewise subdues restlessness and muscular movement in the patient, and diminishes cough—both of which are provocative of a continuance of hæmorrhage. In Bellefield the routine practice in the majority of cases is to give, say, ♏ xv of tinct. opii in slight pulmonary hæmorrhage, and, if the hæmorrhage is severe or persistent, a quarter grain hypodermic of tartrate of morphine. The opium or the morphia may be repeated at four hours' interval if the bleeding persists, and in some cases it may be necessary to give a $\frac{1}{2}$-grain hypodermic of the tartrate of morphine.

The patient should be kept under the influence of the drug so long as the hæmorrhage remains active—that is to say, so long as the expectoration presents bright fluid blood. When the bloody spit becomes dark in colour we know that it is not freshly shed, and we have reason to hope that the active hæmorrhage has ceased, and, therefore, we gradually leave off the administration of the drug. Of course it is very important to ascertain that the kidneys are in good working order before pressing opium or morphia, and for this reason the urine should be carefully tested for albumen. If the patient is suffering from renal disease, we are seriously handicapped in our treatment of pulmonary hæmorrhage.

In cases of severe and protracted hæmoptysis it may be necessary to push the administration of morphia. Some patients have a remarkable tolerance of the drug; but, of course, the cases in which it is being exhibited require careful watching, and the state of the pupils will receive attention. It is well to keep the patient quiet and drowsy while the hæmorrhage continues. If he sleeps, so much the better.

After giving a hypodermic, it is not a bad plan to express aloud the opinion that a beneficial result will soon follow, as this predisposes the patient to become calmer in mind, and helps to facilitate the soothing influence of the drug. And in many, indeed most, cases the good effect of the morphia is soon manifested.

The constipating tendency of opium calls for the administration of purgatives and enemata, but I shall return to that subject later on.

There is one aspect of the prolonged administration of morphia injections which may give rise to some disquietude in the mind of the conscientious physician—I refer to the possibility of arousing in the patient an appetite for the drug, which might later on develop into that frightful form of vice known as the "morphia habit." The possibility of this cannot, I think, be denied; but I think, at the same time, that it should not interfere with the use of this valuable (probably the most valuable) means of controlling hæmorrhage which, if not checked, might prove fatal. It is unlikely that the drug will require to be employed for such a length of time as is calculated to establish the craving. And in any case the saving of life is the first consideration. If a tendency to morphinism shows itself, it can be dealt with when the emergency is over. At the same time, I should say that in treating a patient of very pronounced neurotic type, it would be well, perhaps, to avoid the use of morphia unless absolutely necessary, and in any case the use of the drug should not be unnecessarily prolonged. For slight and transient cases of pulmonary hæmorrhage other remedies may be employed.

As already remarked, there are cases in which it is necessary to push the use of morphia, and the extent to which that is done must largely depend on the urgency of the case, but at the same time we must exert every care to keep within the limits of safety. In many cases it is our clear duty to make a bold use of morphia, but we must never be reckless. It is a very undesirable thing to induce an attack of morphia collapse.

Atropine is another drug which has been highly spoken of in the treatment of pulmonary hæmorrhage. My experience of it is limited, but I am inclined to think that it is a valuable addition to our armamentarium. As we are all aware, belladonna has the effect of causing a reddening of the skin: indeed, the erythematous reddening of the skin, together with the dryness of the throat, presents a picture almost suggestive of scarlet fever. The beneficial influence of atropine in the treatment of pulmonary hæmorrhage is no doubt due to the dilatation of the systemic arterioles, thus (like nitrite of amyl) giving rise to flushing of the surface, and consequent lowering of pressure in the pulmonary vessels. Sulphate of atropine may be given hypodermically in doses of $\frac{1}{100}$ grain at intervals of four or two hours, according to circumstances, and it is needless to add that the effect must be very carefully watched.

As I have said, my experience of it is limited, but I am inclined to entertain a favourable opinion of it. I should certainly be inclined to give it a trial where the free administration of opium or morphia was contra-indicated, and in cases when those drugs had failed to give a satisfactory result.

I think there can be little doubt about the value of nitrite of amyl inhalations. The action is to dilate the peripheral vessels and relieve the pressure in the pulmonary arteries. As we are aware, the inhalation is quickly followed by flushing of the face and a sensation of fulness in the head. When the patient has a seizure in which there is persistent coughing, and spitting of blood, I think it is well to resort at once to the nitrite of amyl inhalation, after the administration of a $\frac{1}{4}$-grain hypodermic of tartrate of morphine. Under the influence of the inhalation I think you will find the cough slacking, and a consequent diminution of the hæmoptysis.

In these urgent attacks one is thankful for anything that will check the alarming state of things, in which the bleeding provokes the cough, and the cough promotes the bleeding. In such cases nitrite of amyl should have a fair trial, even if the patient objects to the disagreeable sensations attending the inhalation. When we have a hæmorrhagic case to deal with, it is well always to have a box of nitrite of amyl capsules at hand.

Trinitrin—nitroglycerin—in $\frac{1}{100}$ grain doses may be tried with a view to lower the blood-pressure. It is well to give it a trial when indicated, but I cannot say much about it. It is apt to give the patient headache. Of course this powerful drug must be administered with care, and its effect watched.

Terpinol in 3-drop doses, in milk, every two hours, has been recommended in the treatment of hæmoptysis. I have tried it, and my impression so far is favourable to it, but we all know the danger of too readily attributing beneficial effects to the use of a drug, when the same result might have followed from expectant treatment. I think this cautious attitude of mind is especially desirable in dealing with remedies for hæmoptysis, for we know that such hæmorrhage may become arrested spontaneously. At the same time, we are glad to have on our list any agent which is likely to help us in dealing with bleeding from the lungs, and sometimes when one remedy fails another will prove successful.

Drachm doses of the fluid extract of senecio have been recommended in the treatment of hæmoptysis. My experience of it has been very limited, and I do not care to say much about it, but the impression so far is favourable.

For the purpose of increasing the coagulability of the blood various means have been suggested: for example, the administration of calcium lactate, of serum, and of gelatin. With regard to the first (lactate of calcium), it is likely to cause disagreeable gastric disorder, and this is very undesirable, especially in cases of pulmonary tuberculosis when we are anxious to avoid anything which will interfere with the function of digestion. The injection of serum is a matter for careful consideration, but I have no personal experience of it. As to gelatin, there are difficulties in the way of administration. The subcutaneous injection is painful, and unless extreme precautions are taken in preparing the gelatin, tetanus is apt to follow. If given by the mouth the patient soon gets sick of it, and it is difficult to get him to swallow the large quantities which are likely to have a decided effect. The gelatin is, of course, greatly increased in bulk when converted into jelly. I have tried gelatin in a limited way, and, although I cannot speak confidently, I am inclined to give it some credit.

Before leaving the subject of medicines I must refer to the use of purgatives. In all cases of pulmonary hæmorrhage it is a matter of prime importance to keep the bowels free. Constipation should be carefully guarded against. Nothing is more objectionable than to have a hæmorrhagic case straining at stool to get rid of hardened matter in the rectum. Regular action of the bowels should be ensured by the use of laxatives, and the risk of hardened fæces in the rectum should be obviated by the use of an injection of warm olive oil.

When active hæmorrhage is present it is sometimes rather embarrassing to know exactly what to do. We do not wish the patient to go to stool in the midst of a severe hæmoptysis. Therefore, it is well to wait till there is a cessation of the bleeding and then give a good dose of Epsom salts, or other saline purge, so as to ensure a watery evacuation and so lower the blood pressure. Of course the bed-pan will be used, and the efforts of defæcation may be minimised by the use of olive oil enemata, followed by an ordinary soap and warm water injection.

The regulation of the bowels is a matter which should receive constant attention in every case of phthisis, and especially when there is shown a tendency to hæmorrhage. In ordinary circumstances castor oil is the most satisfactory laxative. Given in doses of one to two tablespoonfuls, with a few drops of tinct. opii and a little aq. menth. pip., it usually ensures easy and efficient action of the bowels. Cascara sagrada may be used instead if the patient has a great dislike to castor oil, but the latter is preferable. When there is sluggishness in the action of the colon, pil. aloes et myrrhæ may be given as an after-dinner pill. But when hæmorrhage threatens, a saline purge is indicated to secure a copious watery evacuation, and, by draining off serum, effect a lowering of the blood-pressure. For this purpose a good dose of Epsom salts is probably best.

I have now mentioned the drugs which I have employed in the treatment of pulmonary hæmorrhage. I do not present them as an exhaustive list, but merely as an enumeration of remedies in which I have more or less faith, founded on clinical experience. And it must be confessed that sometimes our well-tried remedies fail us, and we seem almost powerless to cope with the evil which we are trying to control. When one drug fails we must try another, but it is a bad plan to jump about in a haphazard fashion. Morphia, above all, should have a fair trial, for it seems to be the remedy on which most reliance is to be placed. From time to time we meet with cases of hæmorrhage in which no treatment is of any avail. When a considerable vessel suddenly gives way, we reach the patient's bedside to find him bathed in blood—perhaps already dead.

I shall now briefly bring under your notice some forms of external applications which I regard as useful in the treatment of pulmonary hæmorrhage.

When hæmoptysis is severe and accompanied by a persistent cough, the application of a mustard leaf to the lower part of the neck, or the upper part of the sternum, may be tried. I think it is worthy of trial; and I am inclined to think that it does good, whether by having an effect on the vasomotor system, or by distracting the patient's attention from his alarming situation, I am not prepared to say. One is thankful for any help in these urgent cases. The leaf should be held in position by the nurse's hand and firmly pressed to the skin.

Dry cupping, by means of elastic suction balls, is a method which should be borne in mind. The cupping glasses should be applied to the front of the chest on the side from which the hæmorrhage is believed to be coming. It must be confessed that it may sometimes be a matter of doubt as to which lung is bleeding, but it will be presumably on the side where we know the gross lesion to be situated, and the patient's sensations may help somewhat in guidance; but still mistakes may be made. When in doubt the suction may be applied to both sides of the chest. The nature of the proceeding should be briefly explained to the patient, so that he may not be excited by the apprehension of some formidable "operation." Of course, the ordinary cupping glasses, with the creation of a partial vacuum by a spirit lamp flame, might be employed; but the use of the elastic balls is much more convenient, and less likely to cause the patient any apprehension. One or more glasses may be applied to the front of the chest, and they should be left *in situ* for a time sufficient to induce marked congestion of the skin. When the patient is very thin and emaciated some difficulty may be experienced in getting the glasses to adhere. In cases where the bleeding is moderate, but persistent, I think this method should have a fair trial.

The intermittent application of an ice-bag to the front of the chest may also be tried. The ice-bag should not be left on the chest for a long time; it should be applied intermittently. Place it on the chest for, say, ten minutes, then remove it for ten minutes, and again apply it. This should be done with as little disturbance to the patient as possible.

Finally, I shall mention a plan which may be resorted to when other methods of treatment fail, namely, compressing the limbs at their proximal ends. My experience of it is limited, but it has been such as to give me the impression that good results may be obtained from it.

The method consists in the application of broad bandages to the arms close to the armpits, and to the thighs close to the groins. The bandages should be firmly but not tightly applied, the object being to retard the venous, without checking the arterial, circulation. The bandages may be kept on for some hours, and, if the hæmorrhage is checked, may then be cautiously removed. First one and then another should be slackened and, after a pause, taken off.

One feels a certain amount of uneasiness in employing this method. One writer mentions disastrous results which followed the abrupt removal of the bandages; but still, with care, I believe that the plan is well worthy of a trial in dealing with severe and protracted hæmorrhage, and when due care is exercised in the removal of the ligatures, there is not much reason to fear undesirable consequences. As I have already remarked in the course of this paper, we are often thankful for any means which are likely to enable us to attain our end.

In conclusion, it only remains for me to say a few words on the dieting of hæmorrhagic patients, the amount of liberty to be accorded them, and the great importance of avoiding physical examination of the chest.

One distinguished and experienced physician advocates a generous diet, and seems to think that the usual restrictions are uncalled for; but I cannot agree with him. In my opinion, the diet should be light and limited during the continuance of anything like severe hæmorrhage: milk and water, and perhaps milk and egg, should be quite enough. For thirst, which is often severe, ice may be given to suck; it is undesirable that the patient should drink much fluid. If the hæmorrhage is only slight, some fish or chicken may be allowed, and a little well-boiled porridge and milk is a good article of diet for such cases. When only staining is present, ordinary diet in moderate amount may be permitted.

During active hæmorrhage, as a matter of course, the patient will be kept quiet and in bed; but for mere staining or a little streak of blood in the sputum, I think the patient may be allowed to move about a little in a quiet way. All hæmorrhagic patients should avoid severe exertion, even when there is no evidence of blood: sudden, violent effort is specially objectionable.

It is a wise plan to avoid percussing and auscultating the chest of a patient suffering from pulmonary hæmorrhage. In such cases I would advise that physical examination of the chest should be left severely alone. Such is my earnest recommendation: the man who sets aside this caution may some day have bitter cause to repent it.

Obituary.

JOHN KING RITCHIE, M.B., C.M.GLASG., LIEUT.-COLONEL, R.A.M.C.

THE news of the sudden death on 6th of last month of Lieut.-Colonel John King Ritchie, R.A.M.C., came as a great shock to his many friends in Glasgow.

Deceased, who had recently been invalided home from India, had taken up his residence in Helensburgh. He was visiting Blantyre Priory in the company of his sister-in-law, who resides in Uddingston, when he accidentally fell over the river embankment, and when found was in an unconscious condition. He was removed to a nursing home in Glasgow, where it was discovered that he had sustained a fracture of the skull, and where he died two days later.

Colonel Ritchie, who was in his fifty-first year, studied medicine in the University of Glasgow, and graduated M.B., C.M., in 1884. Shortly after graduation he joined the Army Medical Service, in which he was recently promoted Lieut.-Colonel. During his service he was much abroad, and in addition to the West African medal and clasp he held the Queen's and King's medals for the South African Campaign. He was the author of a paper on the fevers of West Africa, published in the *Journal*, in 1898; and he contributed some papers to the *Journal of the Malaya Branch* of the British Medical Association.

During his periods of leave he often returned to Glasgow, where his geniality, added to his sterling qualities, secured for him the friendship of an increasing circle. He left no family, but is survived by his widow.

JAMES PROVAN, M.D.GLASG., F.R.F.P.S.,

IBROX.

A WELL-KNOWN practitioner in the southern district of the city has passed away in the person of Dr. James Provan, of Ibrox, whose death took place on 23rd September. Dr. Provan received his medical education at the University, where he graduated M.D. in 1864, and the same year he obtained the Licence of the Royal College of Surgeons of Edinburgh. In 1884 he became a Fellow of the Faculty of Physicians and Surgeons. He had for a long period been engaged in practice in Ibrox, and had devoted considerable attention to the study of diseases of the skin.

In his early days he was a member of the Volunteer force, being Surgeon to the 1st Lanarkshire Royal Garrison Artillery, from which corps he retired some years ago with the rank of Surgeon-Colonel.

He was also well known to his friends as a collector of antiques and curios. Deceased is survived by his widow.

MATTHEW MARTIN, M.B., C.M.GLASG.

No death could be more startling in its suddeness than that of Dr. Matthew Martin, which occurred on 10th ult. Dr. Martin, who was one of the best known medical practitioners in the East-End of the city, had been chatting with a friend. In the course of a few moments thereafter he was taken ill and dropped down at the corner of Soho Street and Gallowgate, and died before any assistance could be rendered.

Deceased was a native of the East-End, being a son of the late Bailie James Martin. His early education was received at St. John's School, David Street, and later at the Dennistoun Academy, then known as M'Gregor's School. After leaving school he studied medicine at the University, and graduated M.B., C.M., in 1882. He entered practice in the East-End almost immediately after leaving college, and soon acquired a wide connection.

He was also Medical Officer to the Glasgow Parish Council and Corporation Tramway Department, and was Treasurer for the East-End branch of the Poor-Law Medical Officers' Association.

In addition to his professional work, he had many and varied interests, having been for thirty years a member of the Glasgow Parish Council, and also taking an active part in the affairs of Whitevale Municipal Ward. Dr. Martin is survived by his widow and one son.

JAMES NATHANIEL HARVEY CROW, M.B., C.M.GLASG., J.P., ARDRISHAIG.

DR. JAMES N. H. CROW died at Tighanobe, Ardrishaig, on 23rd September.

Deceased graduated M.B., C.M., in Glasgow in 1876, and shortly thereafter he went to Africa, where he remained for several years. During the war of 1880-81 he was Surgeon to the Pretoria Carabineers and Pretoria Horse, and also to the 94th Regiment, at Bronkhorst Spruit, Transvaal. He became a member of the Transvaal Medical Board, and on returning to this country he was appointed Honorary Medical Officer to the London Argyllshire Association. He ultimately settled in Ardrishaig, where he became a Justice of the Peace for Argyllshire.

CURRENT TOPICS.

APPOINTMENTS.—The following appointments have recently been made:—

J. Henderson, M.D., Ch.B.Glasg. (M.B., 1898), F.R.F.P.S., to be Professor of Practice of Medicine at St. Mungo's College, *vice* Dr. T. K. Monro, resigned.

Wm. Macewen, M.B., Ch.B.Glasg. (1910), to be School Medical Officer for Cupar District, *vice* Dr. Nicholson, now Assistant Tuberculosis Officer for Fife.

ANDERSON'S COLLEGE MEDICAL SCHOOL AND THE DENTAL CURRICULUM.—The governors of Anderson's College Medical School have recently decided to establish a complete curriculum of dental classes. Such dental classes as form part of the ordinary medical curriculum have been for a long time provided; but by the recent action of the governors it will now be possible for dental students to take out a complete course at the school. In connection with this, the following appointments have been made:—Professor Carstairs C. Douglas, to be lecturer on Dental Bacteriology; Dr. W. Ferguson Mackenzie, on Dental Anatomy; Dr. John Watt, on Dental Surgery; and Mr. Charles Read, on Dental Metallurgy.

THE MEDICAL SOCIETIES OF GLASGOW.—The following are the office-bearers of the different medical societies of Glasgow for the year 1913-1914:—

MEDICO-CHIRURGICAL SOCIETY.

President,	MR. A. ERNEST MAYLARD.
Vice-Presidents,	DR. JOHN H. TEACHER. DR. J. N. MARSHALL.

Council.

Section of Medicine.	*Section of Pathology.*
DR. DOUGLAS RUSSELL.	DR. C. H. BROWNING.
DR. FRANK J. CHARTERIS.	DR. J. SHAW DUNN.
DR. J. S. M'KENDRICK.	DR. J. ARCH. CAMPBELL.
DR. G. MORRIS CRAWFORD.	DR. A. M. KENNEDY.

Section of Surgery.	*Section of Obstetrics.*
DR. ROBERT KENNEDY.	DR. G. N. TURNER.
DR. THOS. KAY.	DR. G. BALFOUR MARSHALL.
DR. DUNCAN MACARTNEY.	DR. ALEX. G. BANKS.
DR. J. EWING HUNTER.	DR. J. NIGEL STARK.

Treasurer (Interim),	DR. JAMES H. MARTIN.
Editorial Secretary,	DR. ROBERT SPEIRS FULLARTON.
General Secretary,	DR. ARCHIBALD YOUNG.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Hon. President,	SIR FRANCIS HENRY CHAMPNEYS, BART., M.D., F.R.C.P.E.
President,	DR. JOHN LINDSAY.
Vice-Presidents,	DR. G. N. TURNER. DR. W. D. MACFARLANE.
Secretary,	DR. DAVID SHANNON.
Treasurer,	DR. WM. RITCHIE.
Editor of "Transactions," *Reporting Secretary,*	DR. DONALD DUFF.
Pathologist,	PROF. JOHN H. TEACHER.
Past President,	DR. A. W. RUSSELL.

Members of Council.

DR. JAMES CRAIG.	DR. JOHN RITCHIE.
DR. J. MUNRO CAMPBELL.	DR. A. T. CAMPBELL.
DR. JAMES TODD.	DR. A. LOUISE M'ILROY.

SOUTHERN MEDICAL SOCIETY.

Hon. President,	Sir James Barr.
President,	Dr. Jas. H. MacDonald.
Vice-Presidents,	Dr. David Lamb. Dr. Arch. M'Crorie.
Secretary,	Dr. John Graham.
Editorial Secretary,	Dr. Robert Adam.
Treasurer,	Dr. W. H. Manson.
Seal Keeper,	Dr. Jas. R. Drever.
Representative to Victoria Infirmary,	Dr. John Stewart.

Extra Members of Council.

Dr. C. E. Robertson. | Dr. W. K. Peden. Dr. R. N. Dunlop.

Court Medical.

Dr. Jas. A. Aitken (*convener*).
Dr. Alex. Miller.
Dr. D. M. Smith.
Dr. John Gardner.
Dr. Yuill Anderson.

EASTERN MEDICAL SOCIETY.

President,	Dr. David Glen.
Past President,	Dr. George M'Intyre.
Vice-President,	Dr. Alex. Munro.
Secretary,	Dr. Hugh A. M'Lean.
Reporting Secretary,	Dr. Andrew P. Granger.
Treasurer,	Dr. Joseph Green.
Seal Keeper,	Dr. Samuel Capie.
Auditors,	Dr. J. W. Anderson. Dr. Malcolm Black.

Council.

Dr. W. J. H. Sinclair.
Dr. John Patrick.
Dr. T. C. Barras.
Dr. Miller Semple.
Dr. J. W. Mathie.
Dr. Thomas Russell.

NORTHERN MEDICAL SOCIETY.

President,	Dr. James B. Miller.
Past President,	Dr. John Baird.
Vice-Presidents,	Dr. Arthur M. Crawford. Dr. Thos. Dow Waddell.
Treasurer,	Dr. James H. Martin.
Secretary,	Dr. Charles Bennett.
Reporting Secretary,	Dr. Angus M'Phee.
Seal Keeper,	Dr. William Caskie.
Auditors,	Dr. Lewis MacLachlan. Dr. R. D. Hodge.

Council.

Dr. Jas. Todd.
Dr. J. G. Connal.
Dr. Robert Grieve.
Dr. Malcolm Campbell.
Dr. A. J. Ballantyne.
Dr. R. D. Hodge.
Dr. R. G. Inglis.
Dr. J. Horne.
Dr. J. A. C. Macewen.
Dr. John Ritchie.
Dr. A. T. Campbell.
Dr. J. Gray.

PARTICK AND DISTRICT MEDICAL SOCIETY.

President,	Dr. J. Hamilton Campbell.
Vice-Presidents,	Dr. John Taylor. Dr. Farquhar Gracie.
Treasurer,	Dr. W. S. Paterson.
General Secretary,	Dr. Edward J. Primrose.
Recording Secretary,	Dr. James Girdwood.

Council.

Dr. D. Westwood.
Dr. A. Sutherland.
Dr. J. Gracie.
Dr. Gibson Graham.
Dr. James Wylie.
Dr. A. E. Ward.
Dr. T. Douglas Brown.
Dr. J. Martin.

In Praise of Sugar.—In view of the wholesale condemnation of the "jelly piece," and the much shaking of old heads over the amount of money spent in sweets by the young, we were delighted to have Sir James Crichton-Browne's eulogium on sugar.[1] It agreeably reminded us of a by-gone philosophy that is by no means musty even for to-day—"If sugar be a fault, God help the wicked!" It seems to us that we are constantly in danger of forgetting the importance of this substance to the economy and the State, despite the facts that no athletic feat calling for endurance is nowadays performed without it, and that in the South African war our men craved more for sweet stuffs than they did for alcoholic drinks. The War Office, tardily recognising this, only the other week announced that the daily field ration of sugar would in future be increased from two to three ounces. Besides, did not that redoubtable soldier, Sir John Falstaff, suck sugar-candy to make him long-winded?

Historical Medical Museum.—The Historical Medical Museum, at 54a Wigmore Street, London, W., was closed on 31st ult., and will remain so for a few months to allow of re-arrangement as a permanent museum. It is proposed to re-open the museum in its permanent form in the spring of next year.

The Breathing Mechanism in Diving.—At the opening meeting of the session of the Royal Philosophical Society, on the evening of 8th ult., a lecture was delivered by Professor Noël Paton on "The Breathing Mechanism in Diving."

Professor Paton first referred to the very different power of enduring submergence shown by different animals and by different persons, and to the influence of practice in increasing this power. To prevent drowning in submergence the breathing must be stopped so that water is not sucked into the lungs, and a supply of oxygen must be secured by storing air in the body or by storing oxygen in the blood. A man by deep and rapid breathing can so clear out the carbonic acid—the normal stimulator of respirations—from his body that a condition of apnœa—absence of breathing—lasting in some individuals to as much as three or four minutes, may be produced; and, if at the same time he saturates his body with oxygen by one or two inhalations of that gas, he may be able to hold his breath for as much as eight minutes. In ducks the power of sustained submergence is peculiarly well developed—they stop breathing and remain in a state of apnœa. Paul Bert found that some ducks did not drown when submerged for fifteen minutes. He ascribed the onset of apnœa in the duck to a voluntary action, and associated its power of resisting submergence with its great volume of blood.

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[1] Speech delivered at the fourth annual dinner of the Institute of Certificated Grocers, London, 24th September, 1913.

Richet, on the other hand, showed that the apnœa is a reflex action independent of volition, and denied that the power of sustaining submergence is due to the quantity of blood, but ascribed it to a decreased oxidation in the tissues, due to a reflex slowing of the heart induced by the contact of water with the head. Dr. F. M. Huxley, working in the physiological laboratory of the University of Glasgow, showed that the slowing of the heart is not due to a reflex, but is simply an accompaniment of the apnœa. She further studied how the condition of apnœa is produced, and found that not only does submergence of the head undoubtedly produce a reflex stopping of the breathing quite apart from volition, but that this reflex is supported and strengthened by another reflex mechanism—the posture of the head and neck. So long as the crown of the head is upwards it is difficult to produce apnœa; but when it is turned down, or even when the bill points vertically down, as in diving, the breathing stops whether the head is submerged or not. This effect is due to the labyrinths of the internal ear, and it may be removed by their being thrown out of action by cocaine. But, further, the mere straightening out of the joints of the neck also tends to produce an apnœa. The lecturer had further investigated this mechanism, and had found that in some ducks the labyrinthine reflex is the most important, while in others the neck reflex plays a more prominent part.

By these reflex mechanisms breathing may be stopped for four or five minutes without the duck suffering inconvenience.

The question was next discussed, how is it that the accumulation of carbonic acid in the body during submergence does not excite the respiratory mechanism? The researches of Orr and Watson in the physiological laboratory were described. These investigators had found that in the duck the action of carbonic acid upon the respiratory mechanism is quite different to its action upon the mammal, and that instead of stimulating that mechanism it actually checks it. In the duck decrease of oxygen, not increase of carbonic acid, acts upon the nervous mechanism of respiration, and compels the birds to come to the surface. The action of the vagus nerve in calling forth respiration was also discussed.

Professor Paton handled a difficult subject in a masterly way, and was listened to with sustained interest by an appreciative audience.

SIXTEENTH ANNUAL REPORT OF THE GLASGOW DISTRICT MENTAL HOSPITAL, GARTLOCH, FOR 1912-1913.—From the Report of the Medical Superintendent (Dr. James Parker), of Gartloch Mental Hospital, we learn that on 15th May, 1912, there were on the Hospital Register 417 men and 371 women —788 in all. Of the 235 cases admitted during the year, 108 were men and 127 women. The total number of cases under care and treatment during the year was 525 men, 498 women. One hundred and eighty patients were discharged—80 men and 100 women.

There were 90 deaths—56 men and 34 women.

The average number resident daily in the hospital was 410·6 men, and 367·5 women—or a total of 778·1. On 15th May, 1913, there were on the Register 753—or 389 men and 364 women—a decrease in the number resident of 35.

The 180 discharges were made up as follows:—28 men and 53 women (81) were discharged recovered. Fifty-two men and 47 women (99) were discharged, relieved, or not improved. Of the last group some 60 were transferred to other Scottish Asylums (30 men and 30 women); 1 was transferred to Ireland, and 1 to England. Nine men and 7 women (16) were discharged relieved to the care of friends, and 9 men and 9 women (18) were boarded out with suitable guardians in country districts. Three were discharged on expiry of warrant.

The admissions showed a marked decrease as compared with recent years, last year and the year before that having respectively 258 and 307, as compared with 235 this year. The character of the admissions from the point of view of probable recovery was poor. Only 40·7 per cent of the admissions were first attacks of under one year's duration. No less than 42·5 per cent of the admissions were hopelessly incurable—chronic delusional insanity, senile and organic dements, cases of congenital defect and general paralytics.

From a table showing the proportion of cases, and the number of cases in each year admitted during the periods of development, maturity, and decline, since the opening of the hospital in 1896, it is seen that the percentage from 30 to 50 years of age has markedly diminished, while that of cases over 50 years of age has increased.

The numerous senile cases and paralytic cases make the wards heavy to work. Dr. Parker also refers to the crowding together of cases of hysterical insanity, troublesome and dangerous paranoiacs and epileptics, and the resulting friction and irritation in the wards. The remedy he suggests is increase of accommodation and staff, and he mentions that His Majesty's Commissioners in Lunacy continue to draw attention in their reports to the narrow margin of vacant beds in the Hospital.

Attention is also drawn to the need for accommodation for tuberculous patients, as at present tuberculous men are placed closer than is desirable to acute and recoverable male cases.

The recovery-rate as calculated on the admission-rate of 235 cases was 34·4 per cent—the male recovery-rate being 25·9 per cent, and the female one 41·7 per cent. The proportion of recoveries is largely kept down in the Glasgow Lunacy District Mental Hospitals by the treatment of many of the transient and easily recoverable cases in Duke Street Hospital. The recovery-rate for all the District Asylums of Scotland in 1912 was 37·4 per cent. It seems to be steadily falling, partly no doubt owing to the use of Observation Wards to strain out the transient and slight cases of mental disorder, and to a considerable extent owing to the confidence with which people send their aged relatives and those suffering from incurable bodily ailments, complicated by mental symptoms, to be cared for in District Mental Hospitals.

The death-rate among the men was 13·6 per cent, and on the female side was 9·2 per cent. Eighteen of the deaths were due to general paralysis of the insane, which again this year heads the list of death causes. Fifteen deaths were caused by organic brain disease, such as hæmorrhages and softenings. Fifteen deaths were due to various forms of heart disease, and 13 were caused by tuberculosis in some form. During the year there was a good deal of influenza, and quite a number of cases of pneumonia were associated with it. In 57·7 per cent of the deaths the cause of death was confirmed by *post-mortem* examination.

Alcohol as usual heads the list of determining causes of insanity in the admissions this year, and syphilis is very prominent among the causes. Of the 235 admitted, 213 were tested for syphilis by the Wassermann reaction, and 30·9 per cent gave a positive result. Of the females 24·5 per cent were positive, and of the males 37·4 per cent were positive.

A table is given showing the condition as to syphilis of the admissions from 16th May, 1912, to 15th May, 1913, as tested by the Wassermann reaction, with the form of mental disorder. In this table it is observable that none of the cases of general paralysis so tested gave a negative result.

The "Verandah" Hospital is still the ideal here. And almost all acute cases, mental and bodily, are treated in the open air, while Swedish drill, farm and garden work, and open-air games are freely made use of in the treatment of convalescent and chronic cases. For the female convalescents especially, garden work is found most valuable, and is much appreciated by many of them.

The verandahs attached to the chronic blocks continue to be most useful. They permit of a more continuous open-air life, and by practically enlarging the sitting-rooms give more elbow-room.

The exact effect of the Mental Deficiency (Scotland) Bill when passed it is difficult to estimate, but the probability seems to be that at first, at least, it may increase the strain on the present asylum accommodation by leading to the care of a larger number of deficients in our asylums than are at present cared for there.

The Report of His Majesty's Commissioner in lunacy testifies to the "most capable and efficient manner" in which the management of the institution is performed.

The cost per head per patient this year for maintenance was £29, 17s. 9d., as against £28, 4s. 11d. last year. In view of the high cost of commodities generally, and coal in particular, this increase was unavoidable.

St. Andrew's Ambulance Association: Thirtieth Annual Report.—At the annual general meeting of the St. Andrew's Ambulance Association held in the Merchants' House on 23rd ult., the Council submitted their thirtieth annual report.

From the report, which is for the year ending 31st May, 1913, we learn that during the past year 10,879 calls have been made on the waggons of the Association, and the total number of patients conveyed since the formation of the Association is now 137,147.

In Glasgow alone the number of turns-out has been 7,248, involving 7,333 cases, an increase of 1,078 turns-out, and 1,156 cases as compared with the previous year. Of this large increase of cases 613 have been from the newly amalgamated districts of Partick and Govan during the period from 5th November, 1912, to 31st May, 1913—265 cases (138 accidents and 127 removals) being from Partick, and 348 cases (233 accidents, 115 removals) from Govan. The remainder of the increase, 550 cases, has been from the rest of Glasgow.

The turns-out represent an average of 19·85 daily, or, leaving Sundays out of the calculation, 23·15. A brief analysis of these may be of interest. Out of the total of 7,248 turns-out, 3,585 were to accidents, and 3,663 to cases of illness. In 186 cases the waggons were not required on arrival. Of the 3,585 calls to accidents, 1,018 were from Police Offices, houses and stairs, 1,420 were street accidents, 677 from public works, 347 from docks and wharves, 123 from railways and stations. 2,058 cases of accident, and 1,058 cases of illness, were taken to the Royal Infirmary; 1,220 cases of accident, and 823 cases of illness, to the Western Infirmary; 259 cases of accident, and 432 cases of illness, to the Victoria Infirmary; and 362 cases were taken to the Maternity Hospital; the remainder being taken to their homes or other institutions.

Of the above cases all the accidents (3,625), and 1,372 of the sickness removals, were removed free of all charge to the beneficiaries.

The waggons covered 38,919 miles during the year.

Carrying out its intention, as expressed in last year's report, the Council has added a fourth motor ambulance waggon to its Glasgow service, and, in addition, has been able, partly by the generosity of a friend and of a member of the Council, who both desire to remain anonymous, to provide another motor ambulance of a semi-private appearance. The latter will be used principally in removing cases of sickness for operation, &c., and will not attract the same public notice as the ordinary waggons. At the same time it will be available for ordinary service in case of necessity.

Local Committees of the Association are, in several instances, following the lead given by the Glasgow Centre, and are replacing the horse waggons by motor ambulances; this is notably the case in Edinburgh, Airdrie, Hamilton, Coatbridge, Cambuslang, &c., and the Council has been happy in placing the results of its experience at the disposal of other public bodies, as at Aberdeen, Dundee, Wishaw, Motherwell, &c., and several English towns. It has also placed the drawings of the type of ambulance body, designed by Lieut.-Col. Barnes for the Glasgow transport service, at the disposal of various motor-car builders, and in this and other ways has helped forward the movement towards better means of transport of sufferers from accident and disease.

During the year the responsibilities of the Glasgow service have been increased by the addition to the City of Glasgow of the outlying districts of Govan, Partick, Shettleston, &c. In Govan the Council is providing a sub-station fully equipped with attendants and drivers, and a motor ambulance will be stationed there night and day. The Corporation of Glasgow has kindly placed a portion of the outbuildings at the Albert Street Police Office at the disposal of the association for use as a garage, and it is hoped that the provision of an up-to-date ambulance service will be appreciated by the inhabitants of Govan, and receive the support it deserves.

There is no doubt that both in the case of accidents and urgent removals for operation, &c., great advantage has accrued to sufferers from the enhanced rapidity with which, by motor waggon, they are transported to the infirmaries, nursing homes, &c., and are so brought more rapidly within the reach of the latest resources of science in the cause of humanity. It is intended, however, to keep some of the horse-drawn waggons in reserve in case of emergency.

The report contains much interesting information on such subjects as classes, Red Cross branch, and competitions.

As regards ambulance work in the police forces, it is stated that classes in connection with the police forces in the counties and burghs continue to be formed with satisfactory results. The value to the public of the efficient training in "first-aid" of the police cannot be overestimated, and the Council insures that the St. Andrew's Red Cross badge, bearing the name of the Association, shall only be worn by certificate-holders who keep themselves efficient in ambulance work. Several successful sections of the St. Andrew's Ambulance Corps have been formed among the trained men of the police, and the Council would, in view of continued efficiency, strongly recommend the formation of such sections, as an annual re-examination and inspection under the auspices of the association is then held.

The subject of ambulance is one which appeals to all classes of the community, and the publication of a report such as this should do much to stimulate the public to an intelligent and charitable interest in the matter.

NEW PREPARATIONS, &c.

From Messrs. The Hoffmann-La Roche Chemical Works, Limited.

Digalen (in solution and in tablet form).—The solution is already well known to the medical profession, and now tablets, each equal to 8 minims of the solution, may be obtained ; they are put up in very neat little heart-shaped bottles. They are, of course, for use where the effects of the active principles of digitalis are required.

Omnopon ($\frac{1}{6}$ grain tablets, $\frac{1}{3}$ grain hypodermic tablets, and in ampoules containing about 1 c.c. = $\frac{1}{3}$ grain of omnopon).—This substance is stated to be the total alkaloids of opium in a soluble form, and one part of omnopon is said to equal 5 parts of opium. It is for use as a sedative and anodyne.

From Messrs. Burroughs Wellcome & Co.

'*Tabloid*' *Lymphatic Gland* (gr. 5).—In this preparation each product is stated to represent 5 grains of fresh lymphatic gland substance. This has been advocated for use in cases of enlarged tonsils and adenoid hypertrophy in young children, aged 2 to 5. The theory given is that in such cases the tonsillar enlargement is an attempt on the part of nature to increase the lymphoid tissue of the body ; the originator of the theory states that when the tonsils and adenoids were enlarged he found leucocytosis with diminution of the lymphocytes. Working on this, he gave the preparation under review, and states that he obtained improvement in the condition, and that no bad effects were observed.

From Messrs. David Gardiner & Co., 55 Hope Street.

We have received a specimen jar of "Crusader White Paste." The paste is suitable for office and household use, and for mounting photographs, and is supplied in a jar with a small well for containing water. This prevents the paste from becoming dry, and serves also for moistening the brush before use.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.

SESSION 1912-1913.

MEETING X (*continued*).—21ST FEBRUARY, 1913.

The President, DR. A. FREELAND FERGUS, *in the Chair.*

V.—THE GRAM-NEGATIVE BACILLI FOUND IN PYOGENIC INFECTION OF THE URINARY SYSTEM (WITH DEMONSTRATION).

BY DR. T. J. MACKIE.

The most prevalent organisms found in pyogenic infection of the urinary system are gram-negative bacilli, the so-called coliform bacilli. These include a large number of different types, and comprise (1) those generally classed under the generic term bacillus coli, and (2) those not strictly referable to this class.

At one time the term bacillus coli was considered to refer to one particular type, bacillus coli communis (Escherich); later work, however, has endowed the term with a much wider application, and when one speaks of bacilli coli, one simply refers, as a whole, to a large group or genus comprising a considerable number of different species.

I have applied certain classical tests, which are mainly fermentative reactions, to the different strains of gram-negative bacilli I have found in urinary infection, and the commonest species is that designated bacillus MacConkey No. 71. This is also the commonest type met with in the case of the intestinal contents. Eighty-two strains from 67 cases of urinary infection were examined. Table I shows the characters and relative prevalence of the classical types of bacillus coli. In Table II are represented, first, four strains of bacillus coli which do not conform to the characters of classical types; these I have designated (according to MacConkey's classification) No. 78, No. 110, No. 77, No. 80. Table II shows, also, the characters of the classical bacillus coli anaërogenes and two other closely related types, designated A and B.

Certain of these organisms are capable of evolution, and acquire positive characters which once acquired are not spontaneously lost: this is what is meant by mutation as applied to micro-organisms. From a study of these mutations in the coli-typhoid group, one is inclined to believe that the whole group has originated from one primordial form of simple character—this, I think, is represented in bacillus "D" and bacillus "C," which, as it stands, is distinctly outside the coli group, would represent one of the intermediate stages in such an evolution. The majority of these organisms show no tendency to mutate, and are absolutely fixed as regards their characters; certain, however, show this tendency, and some of these (from urinary cases) are exemplified on Table III.

TABLE I.

Bacillus.	Number.	Motility.	Gelatin.	Glucose.	Lactose.	Dulcite.	Saccharose.	Adonite.	Inulin.	Inosite.	Mannite.	Milk.	Indole.	Voges and Proskauer Reaction.
MacConkey No. 71, .	14	+	–	+	+	+	+	–	–	–	+	A.C.	+	–
Schaffer, ...	7	–	–	+	+	+	–	–	–	–	+	A.C.	+	–
Coli communis (Escherich), . .	6	+	–	+	+	+	–	–		–	+	A.C.	+	–
Vesiculosus, . . .	6		–	+	+	–	–	–	–	–	+	A.C.	+	–
Grünthal, . . .	5	+	–	+	+	–	–	–	–	–	+	A.C.	+	–
Neapolitanus, . . .	4			+	+	+	+	–			+	A.C.	+	–
MacConkey No. 8, . .	1			+	+	–	–	–	–	–	+	A.C.	–	
MacConkey No. 67, .	1	–	–	+	+	+	+	+	–	–	+	A.C.		+
MacConkey No. 74, . .	5	+	–	+	+	+	+	–	–	–	+	A.C.	–	
No. 74 (modified), . .	1				+	+	+					A.C.		
MacConkey No. 106, .	4	+	–	+	+	–	+	–	–	–		A.C.	+	–
MacConkey No. 99, . .	1				+		+	+	+	+		A.C.		–

+ In motility column = motile.
– ,, ,, = non-motile.
+ Under glucose, lactose, etc. = acid and gas.
± ,, ,, ,, = acid, no gas.
– ,, ,, ,, = no fermentation.
A.C. under milk = acid and clot.

+ Under indole = indole formation.
– ,, ,, = absence of indole.
+ Under Voges and Proskauer reaction = positive reaction.
– Under Voges and Proskauer reaction = negative reaction.

This tendency is entirely progressive, and these mutations I take to be only an origin of new species by development of forms with more complicated characters than that from which derived. This view is supported by observation of mutations in the case of gram-negative bacilli from other sources.

In Table II are also represented bacillus fæcalis alkaligenes, and bacillus typhosus from a case of typhoid bacilluria. Another gram-negative bacillus of not uncommon occurrence in urinary infection is that designated urobacillus liquefaciens septicus (Table II). Two types are met with—the "*A*" type is the commoner; the "*B*" type approximates to the classical bacillus proteus. This organism was early recognised as an agent in urinary sepsis.

As a rule, pure cultures of individual types are met with, but sometimes there is a mixture of two or even three different types. This fact must be kept in mind in preparing autogenous vaccines for urinary cases. Another feature of

TABLE II.

Bacillus.	Number.	Motility.	Gelatin.	Glucose.	Lactose.	Dulcite.	Saccharose.	Adonite.	Inulin.	Inosite.	Mannite.	Milk.	Indole.	Voges and Proskauer Reaction.
No. 77, . . .	1	+	–	+	+	+	+	+	–	–	..	A.C.	+	–
No. 80, . . .	1	+	–	+	+	+	+	+	+	+	+	A.	–	–
No. 78, . . .	1	–	–	+	+	+	+	–	–	–	..	A.C.	–	–
No. 110, . . .	1	+		+	+	–	+	–	–	–	+	A.C.	–	–
Coli anaërogenes, .	1	–		+	+	+	+	–	–	..	..	A.	+	–
"A,"	1	–	–	+	+	+	+	–	–	..	..	A.	–	..
"B,"	1	–	–	+	–	–	–	–	–	..	..	Alkaline	+	..
"C,"	2	–		+	–	–	–	–	–	..	+	Slight alkalinity	–	..
"D,"	1	–	–	+	–	–	–	–	–	..	–	do.	–	..
Fæcalis alkaligenes, .	1	+	–	–	–	–	–	–	–	..	–	Alkaline	–	.
Typhosus, . . .	1	+	–	+	–	–	–	–	–	..	+	Slight acid	–	..
Urobacillus liquefaciens septicus "*A*," .	8	+	+	+	–	–	–	–	–	..	..	Digested		–
do. "*B*," .	2	+	+	+	–	–	+	–		..	..	do.	+	–

interest from the point of view of vaccine therapy is that, in an analysis of immunity reactions of this group, one finds that each particular strain has a high degree of individuality. This individuality is well seen in both agglutination and complement deviation experiments.

VI.—NEOSALVARSAN IN THE TREATMENT OF TYPHUS FEVER.

By Dr. W. Kiep.

Dr. Kiep showed temperature charts of four cases of typhus fever treated with intravenous injections of neosalvarsan. In each case the intravenous injection of a full dose of this drug was followed, thirty-five minutes later, by a rigor, accompanied with exacerbation of the pyrexia to 106° F., 107° F., or even 108° F., and this was followed, within twelve hours, by a fall of the temperature to subnormal. In two of the cases (one severe and one mild) the course of the disease appeared to be aborted by a single injection; but in

TABLE III.

Bacillus.	Motility.	Gelatin.	Glucose.	Lactose.	Dulcite.	Saccharose.	Adonite.	Inulin.	Inosite.	Mannite.	Milk.	Indole.	Voges and Proskauer Reaction.
Before mutation,	–	–	+	–	–	–	–	–	–	+	A.	–	–
After first mutation ≡ No. 8,	–	–	+	+	–	–	–	–	–	–	A.C.	–	–
After second mutation ≡ No. 112,	–	–	+	+	–	–	–	–	–	+	A.C.	–	–
Before mutation,	–	–	+	–	–	+	–	–	–	+	A.	–	–
After mutation ≡ No. 112,	–	–	+	+	–	–	–	–	–	+	A.C.	–	–
Before mutation,	–	–	–	–	+	–	–	–	–	+	A.	–	–
After mutation ≡ neapolitanus,	–	–	+	+	–	–	–	–	–	+	A.C.	–	–
Before mutation ≡ No. 38,	–	–	+	+	–	–	–	–	–	+	A.C.	–	–
After mutation ≡ No. 78,	–	–	+	+	–	+	–	–	–	+	A.C.	–	–
Before mutation ≡ No. 78,	–	–	+	+	–	+	–	–	–	+	A.C.	–	–
After mutation ≡ No. 76,	–	–	+	+	–	+	+	–	–	+	A.C.	–	–

the other cases (one severe and one moderately mild) the pyrexia resumed its ordinary course within eighteen hours of the injection, and subsequent injections, when given after an interval of one or two days, produced precisely similar results.

In these two cases defervescence took place at the ordinary time, so that the course of the disease was not aborted by the use of the drug. Nevertheless, the severer of these two cases appeared to have received a definitely beneficial effect from the use of the drug, and no typhoid stage occurred, although one would have expected it from the nature of the case. One intracellular injection was given, without effect on the pyrexia, and one intravenous injection was given after defervescence was complete, and no alterations of temperature occurred.

Control cases (four) of scarlatina simplex, treated with neosalvarsan intravenously, showed little or no modification of the pyrexia as a result, and in two cases of acute lobar pneumonia, in which neosalvarsan was given intravenously, the pyrexia pursued its normal course.

VII.—CASE OF TUBERCULOUS MENINGITIS IN AN INFANT, WITH DEATH AT AGE OF 12 WEEKS (DEMONSTRATION OF SPECIMENS).

By Dr. G. A. Allan.

The infant, a male, was born apparently healthy on 3rd January, 1912, being delivered with forceps. The mother made practically an uninterrupted recovery. The infant was fed from the breast.

On 1st March the child was seen because of a slight bronchial attack, and it was noticed that it was not thriving. The bronchial catarrh cleared up in ten days.

On 22nd March the general condition of the child began to give the mother concern. He was pale and irritable, and weight was little more than at birth. He had a rash resembling lichen on the limbs. There was no gastro-intestinal disturbance. For a day or two the mother had been supplementing the breast feed with diluted cow's milk twice daily.

Two days later crying was almost continuous, and the head was retracted, while the following night there was a convulsion. When seen along with Dr. Leonard Findlay on 25th March the following points were agreed upon:—Temperature, 99° F., pulse rapid, respirations irregular, no vomiting, pupils equal and active, squint occasionally, head retracted, Kernig's sign absent, abdomen flaccid, no glands felt, liver slightly and spleen markedly enlarged. Feeding very difficult, but child not comatose. Lumbar puncture revealed a fairly clear fluid, flowing readily, but not under great pressure.

That evening there were several convulsions, stupor deepened, and on 26th March, when barely 12 weeks old, the child died.

Through a small abdominal incision (all that was permitted) the spleen and a small wedge of the liver were removed. The spleen measured 4 inches by 2½ inches, and was riddled with small tubercles, as was also the liver to a less extent. None was seen in the peritoneal coat of the intestine.

The cerebro-spinal fluid was examined by Dr. Carl Browning for Wassermann reaction and for tubercle bacilli. Wassermann was negative, but abundant tubercle bacilli found, the exudate being chiefly polymorphonuclear. The tubercle bacilli on culture presented the characters of the human type, but by inoculation into a rabbit reacted like the bovine type.

The parents are healthy, as also the only other child, but an adopted boy had tuberculous glands in his neck at the time.

The case presents an unusually early infection, but congenital tuberculosis is very rare. Cow's milk can scarcely be considered as the cause, as it was only given once or twice just before death. The most probable source of infection appears to be the adopted boy.

VIII.—By Dr. J. Cruickshank.—"The Detection of Tubercle Bacilli in Sputum, Urine, &c., by Microscopic Examination and Culture" (with demonstration).

IX.—By Dr. W. J. Logie.—"The Urea: Ammonia Nitrogen Ratio of the Urine, its Significance in Cases with Glycosuria."

X.—A number of chemical and microscopic demonstrations of clinical interest were also given, including:—

1. Spirochæte pallida as shown by dark ground illumination.
2. The hæmolytic and sodium taurocholate reactions for the differentiation of streptococci and pneumococci.
3. The Wolff-Junghans test for albumen in stomach contents as an aid in the diagnosis of gastric carcinoma.
4. Arnold's para-diazoacetophenone reaction for acetoacetic acid.

MEETING XI.—7TH MARCH, 1913.

The President, DR. A. FREELAND FERGUS, *in the Chair.*

I.—THE AVOIDANCE OF UNSIGHTLY SCAR DEFORMITIES IN THE OPERATIVE TREATMENT OF CERVICAL LYMPHADENITIS.

BY DR. JAS. H. NICOLL.

Dr. Nicoll's communication appeared as an original article in our issue for August, 1913, p. 81.

II.—VACCINE-THERAPY IN THE TREATMENT OF GONOCOCCAL VULVO-VAGINITIS.

BY DR. W. R. JACK.

Dr. Jack's paper will be found as an original article in our issue for August, 1913, p. 84.

III.—THE OPERATIVE TREATMENT OF ACUTE APPENDICITIS, WITH SPECIAL REFERENCE TO PRIMARY CLOSURE OF THE ABDOMINAL WOUND.

BY MR. GRANT ANDREW.

Mr. Grant Andrew's communication appeared as an original article in our issue for September, 1913, p. 161.

MEETING XII.—4TH APRIL, 1913.

The President, DR. A. FREELAND FERGUS. *in the Chair.*

I.—VACCINES IN THE TREATMENT OF CHRONIC BRONCHITIS AND ASTHMA.

BY DR. J. H. HARVIE PIRIE.

Dr. Pirie's paper appeared in the *British Medical Journal.*

II.—CASES OF TUMOUR OF THE BLADDER, WITH REMARKS REGARDING OPERATIVE TREATMENT.

By Dr. David Newman.

Dr. Newman's communication will appear in a subsequent number of the *Glasgow Medical Journal.*

Meeting XIII.—18th April, 1913.

The President, Dr. A. Freeland Fergus, *in the Chair.*

I.—THREE CASES OF "FLYING" SCAPULA.

By Dr. Wm. A. Campbell.

1. In one patient, a woman, the condition was due to division at operation elsewhere for extensive glandular tubercle, of the spinal accessory nerve and twigs of the third and fourth cervical nerves, the trapezius muscle nerve supply. The "flying" was very marked, and she demonstrated well how such patients overcame the disability of not being able to raise the arm above the horizontal at the side by making use of upper half of the pectoralis major.

2. In another case, a miner, the condition was also due to trapezius paralysis, affecting the lower fibres chiefly, and arising from a sudden wrench downwards of his shoulder, causing a tear of the third and fourth cervical twigs. The "flying," as in the woman's case, was especially marked when patient performed a pushing movement with arm held below the horizontal in front. Pushing above the horizontal led to "flying."

3. The third case, due to palsy of the nerve of Bell, and affecting the serratus magnus, or serratus anterior muscle, was caused by a sudden depression of the shoulder downwards and backwards by a weight. The "flying" was exaggerated in this case by pushing above the horizontal in front.

II.—CASE OF GREAT SCIATIC PALSY.

By Dr. Wm. A. Campbell.

Palsy was due to a tear of the great sciatic nerve, following a dorsal dislocation of the hip-joint in June, 1912. The anæsthesia and paralysis were complete and typical after the accident, and the anæsthetic area at that date was mapped out on the sound limb. The muscle reactions at that date were also given, and were: faradic—no response; galvanic—(*a*) K C C > A C C; (*b*) reaction fairly brisk; (*c*) amount of current required practically the same as on the sound limb—that is, the reactions of incomplete division; hence no operation was performed.

At the date of the meeting (18th April, 1913) the hamstring muscles had recovered, while the leg muscles were still paralysed. The area of anæsthesia was much diminished, and represented that of an external popliteal paralysis. Now (August, 1913) the calf muscles are acting voluntarily, and the peroneus longus and brevis are acting very slightly but perceptibly.

The frequency with which the external popliteal element of the great sciatic nerve is damaged in dorsal dislocations of the hip was commented upon; and the rarity of the present case, where total paralysis had been present, was remarked. Emphasis was also laid upon the necessity for testing the muscles electrically in all cases of peripheral nerve paralysis before giving a prognosis, and before deciding for or against operation.

Treatment has been massage regularly, electricity for the muscles, and the limb has been kept in good position, a light splint being used while in bed.

III.—CASE OF SPASMODIC TORTICOLLIS.

By Dr. R. Barclay Ness.

A. M'N., a man, aged 22 years, was admitted to the Western Infirmary on the recommendation of Dr. Dickie on 18th March, 1913, on account of spasmodic wry-neck.

History.—The patient states that this is his second attack. The first occurred two years ago while in America. At that time he was a labourer in a steel-work, his work consisting of carrying sheet-iron. He carried his load on the left shoulder, and in order to maintain his balance he had to direct his head and eyes over the left shoulder. As the result of this work he suffered from his first attack of spasmodic wry-neck, his head being turned to the left. He was treated by massage and electricity, but the condition did not altogether pass until the lapse of three months.

The second attack began at the end of December, and has now lasted three and a half months. He ascribes the return again to the nature of his work, which is that of "wood-blocking." He runs a machine that cuts wood into blocks of certain dimensions, and in order to watch the saw while cutting he has to have his head turned round to the left.

He works the machine all day, and has to maintain the above position of his head practically all the time. At first he experienced a feeling of tiredness in his neck, then of spasm of the muscles, chiefly of the right sterno-mastoid, which caused his head to be turned to the left. This was associated with some discomfort and even pain.

Previous to the onset of the first attack above described he states that he enjoyed excellent health. Enquiry into his family history yields no facts on which one could base a family neurosis. His two sisters and four brothers, with the exception of one brother who died of inflammation of the brain, are all streng and well.

Present condition.—The patient presents the typical appearance of one with wry-neck. The face is turned to the left shoulder, the head being a little tilted so that the right ear approaches the right shoulder. There is not much, if any, retraction backwards. This position of the head is evidently due to spasm—more tonic than clonic—of the muscles that rotate the head to the left. The chief of these is the right sterno-mastoid, which stands out prominently, being apparently considerably hypertrophied and in a state of tonic spasm. But the posterior rotators (splenius, trachelo-mastoid, rectus capitis posticus major, superior oblique, inferior oblique) of the opposite side are probably also involved, though this is not so easily recognised.

Though the head is turned to the left he can slowly turn his head to the right and maintain it in that position with an effort of the will, but when that effort is no longer made the head passes again into the position of wry-neck. During sleep the spasm is relaxed, and the head assumes its natural position of rest.

Remarks.—There is no difficulty in recognising the form of torticollis as being spasmodic, and different from the rheumatic form which is transient and brought on by exposure to cold; and different also from the permanent and true form, sometimes congenital, which is associated with an organic contracture.

This spasmodic wry-neck is more usual after middle life: it tends to occur in debilitated subjects of neurotic temperament, and may be brought on as in this case by the nature of their work. It is essentially of the nature of a tic, being a tic of cortical, and not of reflex origin, and constituting one of the most severe forms of such an affection.

Treatment.—In the history it was stated that the first attack passed off spontaneously under treatment within three months. The position taken up by those who have seen him in hospital is that he should be treated by rest and feeding, and the exhibition of sedatives, as well as by massage and electricity, in the hope that there may be gradual cessation of the spasm after the manner of what took place the first time.

But the patient has heard of possible operations curing the condition, and it is with difficulty that he can be persuaded to give the simpler methods a chance. Dr. Dickie was asked to deal with the case by operation, but has wisely, I think, concurred in the view of exhausting all the other methods of treatment first. It is a big operation to resect a portion of the spinal accessory nerve on the right side and divide the posterior branches of the upper four or five spinal nerves in the left side.. If the case should in the long run prove an inveterate one it would be permissible to deal with it in such a way, but cases so dealt with are not all successful.

IV.—CASE OF DISSEMINATED SCLEROSIS.

By Dr. R. Barclay Ness.

History.—W. L., aged 29 years, a ship-stoker, was admitted into the Western Infirmary on 28th February, 1913, complaining that for the last three years he had been unable for his work on account of giddiness (everything he looked at being apparently in constant movement), weakness of his legs, and unsteadiness in his walk.

Enquiry into his previous and family history revealed no important facts bearing upon his present condition beyond the one that in his work he had been subject to great variations in temperature. There is no evidence of his having had syphilis. He is unmarried.

Present condition.—His chief complaint is that all the objects he looks at seem to be "dancing" before him. He is evidently affected with vertigo in its objective form.

He complains, also, of being unable to stand or walk steadily. He has marked ataxia. This, no doubt, depends largely, though perhaps not altogether, upon the vertigo.

Vertigo may be looked upon as the result of a disturbance of the co-ordinating mechanism of the cerebellum, which receives afferent impulses from various sources, including (1) the skin, muscles, and joints; (2) the semi-circular canals; and (3) the muscles of eyes and head which are brought into action when we are looking at objects around us. The half of the cerebellum which receives these impulses exerts a co-ordinating influence on the cerebral motor cortex of the opposite side (Purves Stewart).

In this case we are at once led to think of the eyes being possibly the cause of the vertigo, because there is very marked nystagmus present. Both eyes are seen to have a constant rotary movement when the patient is looking straight forwards, that is, he has bilateral rotatory nystagmus. Lateral and vertical nystagmus can be seen to be also present when the patient looks up or down and to the side.

There are also present other eye symptoms, namely, irregularity of the pupils, optic atrophy in the temporal half of the optic discs in both eyes, and slight contraction of the field of vision. There is no strabismus, and no Argyll-Robertson phenomenon.

The examination of the functions of the cranial nerves, apart from those of the second, third, fourth, and sixth just considered, reveals nothing abnormal, unless, perhaps, some indistinctness of speech. There is no definite "staccato" speech.

The examination of the arms.—He can hold them out in front of him quite steadily, but when he is told to bring his forefingers together from a distance there is seen to be some slight degree of intention tremor.

There is no wasting of the muscles of the upper arm, forearm, or hand on either side. The grip of both hands is good. The reflexes are not exaggerated, and no sensory disturbances, subjective or objective, can be determined.

Examination of the legs.—The muscles are flabby, but are not the subject of definite atrophy. The knee-jerks are greatly exaggerated; the tendo-Achillis jerks are easily elicited; ankle clonus is got, though not sustained, on both sides; Babinski's sign is obtained on both sides. There are no sensory disturbances, subjective or objective.

Examination of the trunk shows the absence or marked diminution of the superficial reflexes; no other abnormalities are detected.

The functions of the bladder and rectum are normal.

Diagnosis.—These symptoms together present a not unusual picture of disseminated sclerosis. It is common to have in this affection vertigo and ataxia early, but it differs from locomotor ataxy in respect to the reflexes. In disseminated sclerosis, as in this case, they are usually exaggerated, while in locomotor ataxy they are, as a rule, lost. In both sensory disturbances may be present, but they are most marked as a rule in locomotor ataxia.

Clinically, the condition in the legs in this case is one of *ataxic paraplegia*, but the presence of the intention tremor, the nystagmus, and, possibly, the speech defect (though not in its typical form)—three important symptoms—make the diagnosis of disseminated sclerosis certain. This is a disease which usually occurs about this period of life, and is as common among men as women. Further, it has no definite association with past syphilis, as is the case with tabes dorsalis.

(The report of this Meeting will be continued in our next issue.)

REVIEWS.

Woman, Marriage, and Motherhood. By ELIZABETH SLOAN CHESSER, M.B. With an Introduction by LADY BETTY BALFOUR. London: Cassell & Co., Limited. 1913.

THOSE who had the privilege of reading Dr. Elizabeth Sloan Chesser's *Perfect Health for Women and Children*, which was favourably reviewed in this *Journal* less than a year ago, will be neither surprised nor disappointed to renew acquaintance with their charming hygienist in the guise of a thorough-paced social reformer. "Rise up, ye women that are at ease," is the cry of this modern as it was of an ancient prophet. A more hopeless class to appeal to can hardly be imagined, but if anything will blow to flame the spark of divine discontent in the breasts of our comfortable sisters, this book is the means to do it. Dr. Chesser's message, however, is not for such only. She calls on all womankind and on man, and has much to say that it is good for the latter to hear, since even the best of us are at heart Turks (Meredith) and *Men of Property* (Galsworthy). At the same time it seems to us that she is in places unduly severe on the male animal, and quite unnecessarily hard on the mere man-doctor, while she endows the medical woman with a knowledge and ability that are but rarely possessed. Though the sex has been by no means inarticulate, the themes of marriage and motherhood have too often been grappled with by the childless spinster, whose aspirations, ideals, and sympathies no doubt differ much from man's, but whose views and opinions on intimate wifely concerns are not much more helpful. Dr. Chesser, however, is both spouse and mother, and has the further recommendation that her medical training and experience enable her to speak authoritatively and at first hand of many things that sociologists know only imperfectly from hearsay. We meet on every page a fresh young mind and a vigorous individuality discussing, and offering solutions for, problems that we had come to regard as insoluble, and doing so with an optimism and a verve that take us with her, not reluctantly but enthusiastically. Dr. Chesser has strong convictions and speaks accordingly. Nevertheless, though roused at times to righteous indignation and holy rage, which are apt to prove contagious, she never shrieks or becomes hysterical. Further, she is frankness itself, and what are usually described as delicate, or dangerous, by some even disgusting, subjects are handled in a bold, fearless way, much as a sensible man or woman grasps a nettle, and with like innocuous results. Our author, to adopt a new metaphor, is no egg dancer, but rather an omelette maker. She never offends. And though we are exceedingly sceptical about the good to be derived from a thorough discussion and knowledge of sexual matters by the entire community, beginning at the age of eight years, we cannot for the life of us see that such can do any harm, and we are even prepared to admit that Dr. Chesser on these topics is not unilluminating.

From start to finish this is a plea for justice to women. The marriage service, we are told, is an insult to the wife; and truly it does seem ridiculous to exact a promise of obedience from her who will so quickly assume command, unless it be on the principle that she who would rule must first learn to obey. At the same time it ought to be counted to the credit of this writer that she asks merely for legal equality, while H. G. Wells in *The New Machiavelli* has advocated that woman be acclaimed as the head of the house: then there are the Miss Lesbia Granthams (*Getting Married*), who have expressed their willingness to be led to the altar provided that they be allowed to measure out to the fathers of their children a fate more or less comparable to what the queen bee metes out to her chosen lord in the empyrean, so graphically told by Maeterlinck.

The marriage laws are full of anomalies; but, if the matrimonial yoke bears heavily on the female partner, it does not, as Dr. Chesser fails to point out, let the male go ungalled. Do we not all remember how poor Mr. Bumble had to pay for the sins of Mrs. Corney? And in *Getting Married* is not the enlightened bridegroom just as reluctant as the informed bride to join hands, though, as becomes a gallant gentleman, he is prepared after making his protest to go through with it? Dr. Chesser shows, to her own satisfaction, how the marriage service and laws might be perfected; but is it not most significant that Mr. Bernard Shaw, with the help of all his clever creations in the above-mentioned brilliant comedy, is quite unable to draw up a contract that will please everybody, and is reluctantly compelled to leave well alone?

We have every sympathy with Dr. Chesser's claim that woman be allowed to manage her own affairs, and agree that her exclusion from the administration of the law is a loss to the community as well as an injustice. A Court of Domestic Relations would seem to be a clamant necessity. What is here said about the unmarried mother, the illegitimate child, and the psychology of infanticide, strikes us as being both wise and true; but while inclined to admit that the murderess of her child, and similar cases, should not be tried by a judge and jury of men, we very much doubt if a court of respectable matrons, "who had kept cold snow within their bosoms throughout life," would be more understandingly sympathetic.

An enormous amount of information will here be found concerning every movement for the welfare of mother and child in the different countries of the world. The various influences that fit and unfit woman for the supreme duties of child-bearing and child-rearing are discussed, and everything that could, or should, be done to improve matters is considered.

Those who are interested in the betterment of the people and the progress of the race—and nowadays are we not all democrats, socialists, sociologists, and eugenists, more or less?—must read this book. We don't expect that everybody will agree with all this writer says and proposes, indeed we hope they will not, but no one can find her acquaintance otherwise than stimulating. So long as Dr. Chesser has us in thrall her schemes sound most plausible, and, if not astonished at the moderation of her demands, we are not greatly shocked by her rapacity. As we close the book, however, and escape from the grip of her delightful steeplechasing style, her womanly persuasiveness, contagious optimism, and marvellous facility in suggesting cures for all our social ills, we feel more firmly convinced than ever of what a long weary road we have to travel before woman will be "in her true sphere, happy and efficient in the home, giving her public service as maternal stateswoman, concerned with social motherhood, protected and protecting."

Lady Betty Balfour contributes a stirring introduction, and in the preface Dr. Chesser acknowledges her indebtedness to her father, Dr. Samuel Sloan, for helpful criticism and valuable suggestions.

Manual of Medicine. By A. S. Woodwark, M.D., M.R.C.P.
London: Henry Frowde and Hodder & Stoughton. 1912.

The addition of another to the numerous small manuals of medicine already in existence is justified by Dr. Woodwark on the ground that he hopes to supply "a *vade-mecum* for the student clerking in the wards or out-patient department, and a convenient reference for the busy practitioner." It may be said at once that he has to a large extent succeeded in his object, and that where he has failed it has been in the endeavour to get too much into his four hundred pages. To be of use to the "busy practitioner" the book must include more than merely the commoner diseases, and the attempt has led in several instances to descriptions so compressed as to be of little value. It would have been better, for example, to omit Vincent's angina than to devote three lines to it; and a list, occupying over twenty lines, of the names of conditions that may cause pigmentation is apt, when unattended by any attempt at differentiating them, to confuse rather than to aid the student. We question whether anything is gained by including a section of eighteen pages devoted to insanity, a subject, of all others, of which elementary knowledge is almost worse than none. The space would have been better given to expansion of some of the articles upon diseases which have met with less than sufficient attention.

The defects are the more unfortunate that, in general, Dr. Woodwark's book has very considerable merits. His descriptions are clear and full, where he allows himself sufficient space: his pathology is up to date; and he devotes more consideration to treatment than is usual in manuals of this class. If his style is jerky, one does not seek for Addison in a synopsis; but we must, nevertheless, protest against such locutions as "nil abnormal" (p. 119), and "linimentum pot. iod. cum sapone" (p. 205). The arrangement of the fevers in alphabetical order has little to commend it; and, in the table of contents, the attempt to determine the relative importance of diseases by the size of the type assigned to their names can succeed only in causing the volume to be regarded frankly as a cram-book.

The Surgery of the Skull and Brain. By L. BATHE RAWLING, F.R.C.S. London: Henry Frowde and Hodder & Stoughton. 1912.

THIS work is based on ten years' experience and research, and, as the author states in his preface, owes something to a recent visit to some of the leading surgical clinics of the United States of America.

Introductory chapters deal with cranio-cerebral topography and technique, and cephaloceles, hydrocephalus, fractures, hæmorrhages, remote effects of head injury, tumours, infective diseases, &c., are treated of in subsequent chapters.

The author advocates a simple method of cranio-cerebral topography which will be appreciated by surgeons. The description is illustrated by some admirable figures. In technique, the author believes that to obtain a successful result hæmostasis is much more important than rapidity of operating. For an anæsthetic he prefers chloroform to ether, although he is alive to the advantages of the open method of administering the latter. As in cranio-cerebral topography, so in the position of the patient—the author recommends simplicity. In the majority of cases no special arrangements are required. The technique of craniectomy (trephining) and craniotomy (osteoplastic flap) is very clear, but no mention is made of replacing after craniectomy the disc of bone, either wholly or in part.

The subject of fractures of the skull occupies considerable space. The author believes that the "majority of cases [of basic fractures] result from direct violence applied at or near the basic level, the fracture passing across the base in the general direction of the applied force, but not necessarily in the same straight line." He thinks that in most combined vault and basic fractures "one may even go so far as to say that . . . the vault fracture is a secondary development, the basic fracture being the primary lesion." These opinions are based on investigation of over three hundred cases, and attention to the author's arguments inclines us favourably towards his deductions. This chapter will repay careful reading by every surgeon.

In the next chapter the subject of extra- and subdural hæmorrhages is carefully gone into, and the author's account of localised subdural hæmorrhage is very clear. Another very interesting chapter is that dealing with remote effects of head injury. The author warns surgeons of their responsibility when advising against operation in traumatic cephalalgia, and from his own experience he strongly recommends that if operation be undertaken the dura mater should be opened in nearly every case.

There are in the volume many other points upon which we would like to touch, but space forbids. From what we have said our readers will doubtless gather that we are very favourably impressed with Mr. Rawling's work, and we can recommend it to them not only as a text-book but as a work of reference. It is well printed and freely illustrated, and its general form maintains the best traditions of the Oxford Medical Publications.

Tuberculin Treatment. By Clive Riviere, M.D.Lond., F.R.C.P., and Egbert Morland, M.B. and B.Sc.Lond., M.D.Berne. Second Edition. London: Henry Frowde and Hodder & Stoughton. 1913.

Only a few months ago had we the pleasure of according the first issue of this work a hearty reception. Now here is the second edition, even more welcome, brought entirely up to date; there having been made corrections and additions in nearly every section, and considerable alterations under the headings—"The tuberculins and their preparation," "Tuberculin in mixed infection," and "Ambulant treatment of phthisis."

Since preparing their first draft, four points have specially impressed themselves on Drs. Riviere and Morland: the rapid growth of institutions in the British Isles where tuberculin is given, and the safety of its careful administration; the danger of ill-considered general reactions, and the grave doubt whether the deliberate production of a focal reaction is wise in pulmonary cases; the very great value of a uniform standard of measurement for tuberculin, and of the cubic millimetre as a unit; and, amongst the abundance of new preparations, the value and growing importance of the albumose-free tuberculin.

There is also added to this edition a Scheme of Notes (loose-leaf), which is most comprehensive, and should be very useful in case-taking.

A Treatise on the Mineral Waters of Vichy. By CHARLES COTTAR, M.D.Paris. London: H. K. Lewis. 1913.

THIS book might aptly be called "all about the Vichy waters." In it the author discusses in a very frank way what they can do and what they cannot do.

After a general introduction on various views anent the origin of mineral waters in general, and of Vichy waters in particular, a chapter is devoted to the individual description of the numerous springs at Vichy. Then the therapeutic means of treatment and the practice of the cure are discussed; baths, douches, inhalations, &c., are gone into in detail. Physiological action in general and action on the organs has a long chapter, and then comes a chapter on the indications and contra-indications of the cure. In this chapter diseases of the various systems and organs are gone into very fairly and fully, and the author states the case in a very fair and moderate way and leaves one in no doubt as to what cases are not to be sent to Vichy. His language about these is that they "are better kept away from Vichy."

One gathers that, in the main, cases for Vichy are the chronic ones, and that acute cases and cases of cachexia of various kinds must not go there.

At the end of the book a short guide to Vichy is inserted, entitled "General notes," and there is also a very full index.

Altogether, one is distinctly interested and pleased by this book. It is moderate in tone, full of information on its subject, and well worth reading.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

MEDICINE.

The Status of Roentgenology in the Diagnosis of Pulmonary Tuberculosis. By Geo. F. Thomas (*Cleveland Medical Journal*, June, 1913).—Thomas considers that stereoscopic radiography gives the most accurate means for the detection of incipient lesions. It shows deep-seated lesions that cannot be revealed by physical examination, and gives an accurate conception of the extent of the disease. One should, however, be conservative in interpreting shadows that do not present typical characteristics, and should depend on physical examination to determine the degree of their activity.

In the stereoscopic image the changes in the air cells are visible at a very early stage, because of the marked contrast in the density of the exudate as compared with the lack of density of air. The exudates appear like little buds forming along the smaller branchings of the bronchial tree. The shadows of these smaller divisions and of the larger trunks are accentuated by the peribronchial infiltration and lymphatic involvement. In the hilus shadow the enlarged glands stand out prominently, completing the typical picture of a localised tuberculous infection of the lungs.

Consolidations, cavitation, pleural effusion, and pneumothorax are readily demonstrated.

Fibrosis shows marked densities and contrasts, distortion of the diaphragm, and displacement of the heart, and compensatory emphysema of the other lung.

Evidences of old infections, such as calcified tubercles and calcified bronchial glands, are practically constant at the hilus of the lung. A careful history will demonstrate that these coincided with a period of ill-health.

In acute cases the tubercle shadows are soft, and present indistinct outlines, and the lung in the involved area is hazy, whereas in healed lesions the tubercles are distinct, sharply outlined, and calcified, the lung parenchyma clear, and the branchings of the hilus shadow well defined.

—Jas. Scott.

Why the Western Climate Yields Poor Results for Some Tuberculous Cases. By H. A. Berkes, M.D. (*Cleveland Medical Journal*, June, 1913).—He points out that the climate of States such as Colorado is ideal. Its elevation varies from 4,000 to 7,000 feet. The atmospheric pressure is low; the air is dry, especially in winter and autumn. There is a clear atmosphere, free from fogs and clouds, an abundance of sunshine, and comparatively little rainfall; moderate breezes in summer, and few blizzards in winter.

However, the door of the west is closed to tuberculars, and the natives are suffering from "tuberculo-phobia." The education of people on the subject of tuberculosis has filled them with such a horror of the disease that love or money can hardly buy a berth at a ranch-house now-a-days.

To obtain a room at a hotel or boarding-house the tubercular has to pretend he is suffering from asthma, bronchitis, stomach-cough, &c., and the patient has to live up to his diagnosis or lose his room. This makes it impossible for them to use a sputum flask, and they expectorate all over the place. Then, again, many cases fail to benefit by the climate on account of their imperfectly ventilating their rooms at night. This applies especially to those who have elected to sleep out in tents.

The need of educating cases to take full advantage of their opportunities by being thoroughly instructed in the details of sanatorium life is strongly emphasised.—Jas. Scott.

SURGERY.

Operative Treatment of the Stomach. By W. J. Mayo (*The Journal of the Amer. Med. Assoc.*, 23rd August, 1913). -This is an analysis of one thousand operations for carcinoma of the stomach—resections, 378; palliative operations, 246; explorations, 376. In these a diagnosis of a surgical nature, probably cancer, was made in time to permit operative interference in more than one-third of all cases.

The early diagnosis does not depend on any sign due to the cancer itself, but on the mechanical conditions produced by the growth. In 67 per cent tumours could be palpated. That tumour indicates an inoperable condition is incorrect. If the tumour is movable, especially if accompanied by early obstruction, the condition is favourable.

Food remnants were found in 53·3 per cent of the cases, and gross obstruction in 20 per cent.

Seventy-five per cent of cancers of the stomach have their origin in the pyloric end. In this connection loss of weight is important. Tumours at the cardiac end produce early obstruction, but are not yet removable surgically. Cancer in the body of the stomach can seldom be diagnosed sufficiently early to permit operation.

Next to tumour and food remnants, the Roentgen ray is most important in that it shows deformities and muscular deficiencies that are evidences of cancer.

The examination of the contents of the stomach during the curable stage of the disease is of relative value, but is not pathognomonic. In a thousand cases of ulcer of the stomach and duodenum, in which operation had been performed, there was an average total acidity of above 63, more than three-fifths of which was free. In the cancer cases the average total acidity was 31, one-third of which was free. One fact was noticed, that a cancerous stomach always contained some acid, though the free acid was often absent. Lactic acid was present in 43 per cent of the cases.

Blood, mostly in the occult form, was present in 73 per cent. The author does not consider that its value as a positive sign is great.

The Oppler-Boas bacillus was demonstrated in 93·8 per cent of the last 146 cases.

A history of gastric disturbance preceded cancer in the majority of cases. The average duration in this series was more than two years. This would indicate that some lesion, ulcerous or otherwise, existed previous to the development of cancer. In 218 cancers of the stomach, investigated by Wilson and MacCarty, it was found that ulcer or some primary lesion of a similar character had existed in more than 50 per cent.

Exploratory incision is the final test for cancer of the stomach. In cases in which the disease in the stomach is mechanically removable, but the glandular involvement is too far advanced, Mayo advocates resection if the patient is in fair condition, as the resulting one or two years of comfortable existence justify the action. Moderate involvement of the pancreas does not preclude operation. In 8 per cent of resections, superficial portions of pancreas were removed and the closed end of the duodenum implanted in the excavation without leakage following. In the majority of cases Mayo prefers to do the resection and gastro-enterostomy at one stage.

For gastrostomy he prefers the Witzel method, with a large catheter. In pyloric obstruction he advocates the anterior gastro-enterostomy, as there is less manipulation. When jejunostomy has to be performed he employs Witzel's method, the jejunum being opened 12 to 16 inches from its origin.

If an early diagnosis has been made and the patient is in good condition, the mortality will be less than 5 per cent. There is a prospect of a five years' cure in 25, and of a three years' cure in 38 per cent.—ROY F. YOUNG.

Acute Dilatation of the Stomach. By O. J. Borchgrevink (*Surgery, Gynecology, and Obstetrics*, June, 1913).—This paper goes very fully into the etiology and treatment of acute dilatation of the stomach. In addition to collected papers on this subject some original cases are given, making 144 cases in all.

Eight groups are given of different conditions of the patients in whom acute dilatation has occurred. The largest group (66·6 per cent) is that of post-operative cases. In this group dilatation most commonly occurs about the third day. The author does not consider that chloroform is specially responsible.

The second group is that of dilatation arising during the course, or the convalescence, of an acute illness. In the author's case in this group the dilatation began after the first food taken after three days' starvation.

The other groups comprised dilatation during chronic illness; with disorder or deformity of the spine; after overloading of the stomach; following a blow on the abdomen; after confinement; and a group without any explanation.

The chief symptoms are vomiting, abdominal distension, and collapse. Other symptoms are pain and tenderness over the distended stomach, insufferable thirst, and scanty urine. The function of the intestine varies: it may cease or be more or less uninfluenced.

With regard to the treatment, surgical interference has given bad results. Drug treatment, such as eserine, is unavailing. Good results follow energetic and continual evacuation by the stomach-tube, saline injections, and, above all, placing the patient in the prone position.

The etiology is still indefinite. The writer believes that there is first a primary gastric atony followed by dilatation, not necessarily due to nerve paralysis, but possibly influenced by the intake of food or the narcotic. This results in a secondary mechanical occlusion of the duodenum by arterio-mesenteric compression due to the drag of the intestines which have been pushed down into the pelvis. The influence of this mechanical factor is proved by the prompt result of abdominal posture. That this duodenal occlusion is not the primary cause of the dilatation is shown by the rapid onset; also "a stomach which cannot overcome such a resistance of a compressed duodenum thereby proves its atony" (Borchardt).—ROY F. YOUNG.

A Study of the Mechanism of the Stomach after Gastro-enterostomy by means of X-rays. By J. H. Outland, E. H. Skinner, and L. Clendening (*Surgery, Gynecology, and Obstetrics*, August, 1913).—The material for these investigations was furnished by patients who had undergone gastro-enterostomy, and the conclusions are not in agreement with those of Cannon and Blake, and others, who, however, studied the conditions in animals. They arrive at the following conclusions:—

1. Gastro-enterostomy, if properly done, is a drainage operation.

2. After gastro-enterostomy, if the stoma is at the lowest part of the stomach in the erect position, the food leaves the stomach almost exclusively by the gastro-enterostomy opening.

3. Under these conditions the stomach is emptied with great rapidity.

4. Gastro-enterostomy should be done only in the presence of pyloric stenosis or pyloric spasm due to duodenal or gastric ulcer.

5. The gastro-enterostomy opening should be made large and placed as close as is permissible to the pyloric antrum.

6. In cases where the gastro-enterostomy opening does not quite drain the stomach, the food leaves both by means of the stoma and the pylorus. Even in these cases, however, the stomach empties itself faster than normal.

7. The clinical failures after gastro-enterostomy are probably due to faulty implantation of the stoma.—Roy F. Young.

DISEASES OF THE EYE.

Tetanus following Injuries to the Eye and Adnexa.—In the *Archives d'Ophtalmologie* (July, 1913, vol. xxxiii, No. 7, p. 418) Vinsonneau records a case in which tetanus followed on a seemingly slight injury to the eyeball. The injury occurred on a Saturday, the patient, a man of 18 years, being struck on the eye by some tool which he was using as a lever. It is not stated if the tool was clean or dirty or had any connection with the soil, *i.e.*, agricultural implement. No foreign body was found in the wound, which seemed to involve the conjunctiva alone, but really penetrated the sclera. Panophthalmitis followed three days later and the eye was excised on the Thursday. On the Friday the patient complained of difficulty of eating and drinking, but as his mouth did not look sore nothing was thought of it. On the Saturday evening tetanus was fully developed, and, in spite of treatment by chloral and antitetanic serum, the patient died on the Sunday evening.

The fluids from the eye were not examined nor was a *post-mortem* examination permitted.

It seems that there are about twenty cases of tetanus arising from ocular injury on record, and whilst one must admit that there is no reason why tetanus should not follow an ocular as much as any other injury, it is probable that many oculists, if not most, faced by the occurrence of trismus after enucleation of an injured eye would not think of tetanus.

Yet it is just this early recognition which is so essential if injections are to be of any avail.—Leslie Buchanan.

The Extraction of Non-Magnetic Foreign Bodies from the Depths of the Eye.—Rollet, of Lyons, has an interesting article in the *Archives d'Ophtalmologie* (June, 1913, vol. xxxiii, No. 6) on "The extraction of non-magnetic foreign bodies from the depths of the eye."

The paper is of considerable importance from two points of view—first, in so far as it deals with non-magnetic foreign bodies, and, second, in so far as it points to an alternative to the usual method of dealing with such cases, namely, removal of the eye.

Some years ago Mr. Simeon Snell (*Transact. of the Ophthal. Society*, vol. xxvi, p. 311) showed us that some of the alloys of steel are non-magnetic, notably the alloys in which manganese takes part. Mr. Snell had examined nickel steel and chrome steel, and found that they remain more or less magnetic; but, with regard to the former, if a very small proportion of manganese is added, it becomes totally non-magnetic.

Rollet now enlarges upon the subject, but includes in his enquiry all sorts of foreign bodies, such as glass, wood, bronze, brass, tin, &c. He points out the importance of not trusting merely to the opinion of the workman who is injured, as Snell had previously pointed out. Snell advised that a portion of the metal which was being worked upon should be brought for investigation.

This cannot always be done, however, and it is by no means easy to be sure from what the chip which penetrates an eye comes, namely, is it hammer, chisel, or material? It often occurs that a workman, perhaps breaking a stone, is struck by a flying particle and he says it is stone, whereas it turns out to be steel off the hammer.

Rollet also points out, what Roll pointed out at the discussion of Snell's paper, that alloys of steel create very much greater disturbance in the eye than does steel. Whilst iron and steel give rise in some cases to little disturbance, an alloy with nickel or manganese, or other substance, may create a vast amount. Steel (pure) may lie encapsuled in an eye for many years without creating any disturbance. I have under observation a case where the steel is embedded in the retina, and can be seen still clear and shining though it has been for thirty-five years in its present position. Alloys of steel do not do this. Copper, nickel, brass, &c., give rise to much irritation, but probably no foreign body creates so much trouble as glass.

Rollet lays much stress on the accurate localisation by *x*-rays. This must be done in three planes, and the position of the foreign body must be charted out as it were on a clock face. It does not suffice to say "about there." The object of this precise localisation is, of course, clear when one understands Rollet's position. It is this, briefly, that he wishes to save the eye, not to excise it.

His method is as follows:—If the foreign body is in the anterior part of the eye, say just behind the ciliary body, he performs an iridectomy and removes the lens. He then, using either a forceps or a scoop, endeavours to draw out the chip of metal or other substance.

If the foreign particle be posterior to the equator, Rollet, having made a conjunctival flap, opens the sclera and chorioid and passes the scoop or forceps in to the position in which the chip should be and tries to remove it.

Rollet has succeeded in doing this in three cases, and he publishes his records, which are so far good that the eye is saved though vision is lost. It must be confessed that one would have liked to know the results longer after operation than the periods (six months, three months, and six weeks), which have elapsed in his cases.

The last case is an especially interesting one, being a gun-shot wound. The pellet, 4 mm. (⅙ inch) in diameter, was removed through a hole punched out of the sclera (not a flap), and the eye healed. The tension (after six weeks) is not mentioned, but the main point is this that a leaden pellet was removed from the posterior part of the eye, which has never been done before.

The whole paper is a plea for an attempt to remove non-magnetic foreign bodies from the posterior part of the eye as against primary enucleation of the eye.—LESLIE BUCHANAN.

Optic Meningitis in Recent Syphilis.—Under the title "Optic meningitis in recent syphilis," Professor de Lapersonne (*Archives d'Ophtalmologie*, August, 1913, vol. xxxiii, No. 8, p. 465) discusses the probable cause of the optic neuritis which is occasionally found early in the course of syphilitic infection.

This type of optic neuritis is usually discovered early, namely, between the sixth week (Groenouw) and the sixth or seventh month, and may precede even the skin lesions. It is frequently monocular, and there is nothing about the clinical appearance, which is characteristic. It may appear in the form of either pure neuritis, neuroretinitis, or retrobulbar neuritis.

It may terminate in retrocession and complete cure without leaving any trace, or it may progress to white atrophy of the nerve.

In order to explain how it is that this symptom may be found present so early in syphilis, and also why it may assume so varied forms, the author finds it necessary to assume the presence of inflammatory changes in the nerve sheath rather than a parenchymatous inflammation of the nerve itself.

This meningitis of the nerve may begin as an infiltration of the arachnoid and pial sheaths, whereby something like an interstitial neuritis is developed.

Supporting this view, de Lapersonne mentions that in 1903 he first noted the presence of lymphocytosis in the cerebro-spinal fluid in syphilis, and quotes the following:—"That the lymphocytosis in syphilitic affections of the retina and optic nerve in [the stage of] evolution, and that it disappears in the period of retrogression." Widal later, *apropos* the above statement, averred that "the more recent the skin lesions are the more intense is the lymphocytic reaction."

The lymphocytosis in such conditions is characterised by preponderance of polymorphonuclears over lymphocytes.

Anatomical proof of the presence of such a condition of optic meningitis is rarely possible, but in a few cases it has been found and demonstrated.

Regarding treatment, the author strongly advises the use of injections of bichloride of mercury in oil. Generally speaking, in the treatment of ocular syphilis de Lapersonne advocates a combined employment of mercury with salvarsan or neo-salvarsan in order that a rapid action may be obtained.

—Leslie Buchanan.

DISEASES OF THE THROAT AND NOSE.

Care of Patients after Operation on the Nose and Naso-pharynx.—Considerable attention has been given of late to the preparation of the nostrils and naso-pharynx before operation, and all methods of packing are being seriously questioned by surgeons practising in this special department.

At a discussion upon this subject at the International Congress of Medicine, held in London in August (*British Medical Journal*, 2nd August, 1913, p. 250), there was a general acceptation of the sterilisation of the vestibule by painting with iodine or some other antiseptic method prior to operation. Previous administration of sodium salicylate or aspirin was advocated, and strong solutions of cocaine were recommended instead of the weaker ones, as being less dangerous owing to the smaller area acted upon and consequently less absorption of the drug. Dr. Mayo Collier objected to packing of any description after operation.—John Macintyre.

Septic Condition of the Mouth and Fauces (*British Medical Journal*, 2nd August, 1913).—Mr. Sydenham described a case in which death from meningitis followed upon a simple intra-nasal operation. He described the death to subsequent sepsis, and noted the fact that the anæsthetist, at the time of the administration of the anæsthetic, was suffering from septic sore throat.—John Macintyre.

Anatomy and Emryology of the Tonsils (*British Medical Journal*, 2nd August, 1913).—The view has often been advanced that the tonsils are not so important in after life as they are up to the age of five, and Dr. Seccombe maintains that these organs are functionally useless after the first few years of life. He put forward this plea, therefore, with a view to justifying the removal of the tonsils, but his views of the physiology and methods of treatment did not gain much support from the other members of the section.—John Macintyre.

Treatment of the Nose and Throat in Infectious Fevers (*British Medical Journal*, 23rd August, 1913, p. 454).—This subject was discussed at the Laryngological Section at the British Medical Association in August.

The fevers specially considered in this discussion were scarlet fever, measles, German measles, mumps, influenza, typhoid, whooping-cough, small-pox, chicken-pox, erysipelas, anterior poliomyelitis, and cerebro-spinal meningitis. Diphtheria was excluded.

The primary lesion in most of these diseases is in the fauces and nasal passages. In order of frequency scarlet fever is first and anterior poliomyelitis last as regards the lesions referred to. Otitis media and permanent deafness are frequent results of such morbid conditions. The more extensive the lesion, and the younger the patient, the greater is the frequency of involvement of the other cavities, structures and organs adjacent to the fauces. In measles and influenza, however, the faucial lesion is slight, but otitis and other sequelæ common.

Treatment. Douching, syringing, and spraying the nasal cavities to prevent aural complications was advocated by some members. Dr. Goodall said it was impossible to remove ropy mucus with a spray. For the nasal passages all the treatment required was douching with boracic or alkaline solution. In Dr. Goodall's opinion it was not necessary to employ local treatment in cases in which the fauces alone were not infected.—JOHN MACINTYRE.

Surgical Treatment of the Nasal Septum.—The submucous resection operation has now been almost universally accepted as the most useful correction for many abnormalities in the nostrils. As time went on one was able to judge better of the results, and the important question of age has often been raised.

Dr. Francis Muecke writes upon the septum nasi and its abnormalities (*The Practitioner*, August, 1913). "In considering operation, an important question is that of age. My practice, so far, has been never to operate before the eighteenth year unless treatment appears to be most urgent, the reason being the fear of ill-consequences to the growing nose. I must candidly state that I do not believe there is any risk, provided the operation is skilfully performed, and with due regard to the special conditions. I have been strengthened further in this belief by observations I have lately made on the repair of the cartilage, of which more anon. I have performed this operation on children under the age of 18 eighteen times, with no ill consequences whatever."—JOHN MACINTYRE.

Books, Pamphlets, &c., Received.

Cancer of the Breast: An Experience of a Series of Operations and their Results, by Charles Barrett Lockwood, F.R.C.S.Eng. London: Henry Frowde and Hodder & Stoughton. 1913. (10s. 6d. net.)

Saint Thomas's Hospital Reports. New Series. Vol. XL. Edited by Dr. J. J. Perkins and Mr. C. A. Ballance. London: J. & A. Churchill. 1913.

Syphilis and the Nervous System for Practitioners, Neurologists, and Syphilologists, by Dr. Max Nonne, authorised translation from the second revised and enlarged German edition, by Charles R. Ball, B.A., M.D. 98 illustrations in text. London: J. B. Lippincott Company. (18s. net.)

Therapeutics of the Gastro-Intestinal Tract, by Dr. Carl Wegele. Adapted and edited by Maurice H. Gross, M.D., and I. W. Held, M.D. With 52 illustrations in the text and 2 figures in colours. London: Rebman, Limited. 1913. (12s. 6d. net.)

Woman, Marriage, and Motherhood, by Elizabeth Sloan Chesser, M.B. With an Introduction by Lady Betty Balfour. London: Cassell & Co., Limited. 1913.

Home, Health, and Domestic Hygiene, by Sir John Collie, Kt., M.D., C.M. Aberdeen, and C. F. Wightman, F.R.C.S.Eng. London: George Gill & Sons, Limited. (9d. net.)

Treatment of Internal Diseases for Physicians and Students, by Prof. Norbert Ortner, edited, with editions, by Nathaniel Bowditch Potter, M.D.; translated by Frederich H. Bartlett, M.D. Second edition in English revised and reset from the fifth German edition. London: J. B. Lippincott Company. (21s. net.)

The Psychoneuroses and their Treatment by Psychotherapy, by Prof. J. Dejerine and Dr. E. Gauckler, authorised translation by Smith Elij. Jelliffe, M.D., Ph.D. London: J. B. Lippincott Company. (18s. net.)

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GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDED 18TH OCTOBER, 1913.

	Week ending			
	Sept. 27.	Oct. 4.	Oct. 11.	Oct. 18.
Mean temperature, . .	58·0	54·8°	47·2°	54·3°
Mean range of temperature between highest and lowest,	12·8°	10·3°	13·6°	10·6°
Number of days on which rain fell, ...	4	1	3	2
Amount of rainfall, . ins.	0·68	0·03	0·10	0·52
Deaths (corrected), . .	318	290	292	273
Death-rates, ...	16·2	14·8	14·9	13·9
Zymotic death-rates, . .	1·0	0·8	1·0	0·9
Pulmonary death-rates, .	3·5	2·7	3·3	2·9
DEATHS—				
Under 1 year, ...	70	53	67	63
60 years and upwards, .	75	77	67	79
DEATHS FROM—				
Small-pox, ...	...	...	...	...
Measles, ...	7	7	10	9
Scarlet fever, ...	3	1	2	3
Diphtheria, ...	4	4	4	3
Whooping-cough, . . .	4	3	2	2
Enteric fever, ...	1	2	...	1
Cerebro-spinal fever, . .	1	...	1	1
Diarrhœa (under 2 years of age),	25	18	15	11
Bronchitis, pneumonia, and pleurisy, ...	43	33	43	39
CASES REPORTED—				
Small-pox, ...	...	...	...	...
Cerebro-spinal meningitis, .	3	...	2	...
Diphtheria and membranous croup, ...	56	45	44	58
Erysipelas, ...	26	31	41	34
Scarlet fever, ...	139	107	120	112
Typhus fever, ...	...	...	...	...
Enteric fever, ...	4	4	5	9
Phthisis, ...	44	44	48	35
Puerperal fever, . . .	1	1	1	4
Measles,*	99	109	117	149

* Measles not notifiable.

SANITARY CHAMBERS,
GLASGOW, *22nd October*, 1913.

THE

GLASGOW MEDICAL JOURNAL.

No. VI. December, 1913.

ORIGINAL ARTICLES.

MEDICAL LIFE AND WORK: AN ADDRESS TO STUDENTS, INTRODUCTORY TO A COURSE OF LECTURES ON PRACTICE OF MEDICINE.[1]

By T. K. MONRO, M.A., M.D.,
Regius Professor of Practice of Medicine in the University of Glasgow.

Although the formal oration or address at the beginning of the session has been done away with in this University—to the great relief, we may confidently assume, of many who would be called upon to be either speakers or hearers—it is nevertheless fitting that on this occasion my remarks should be of a less purely technical character than those which I may have to address to you at subsequent meetings of the class. For I cannot but be sensible both of the honour and of the responsibility devolving upon the occupant of this chair, which possesses an historic interest and importance in the annals of the University, were it only because it was occupied at one time by Cullen, and at a later period by

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[1] Delivered Monday, 13th October, 1913.

Gairdner. If Sir William Gairdner, my former teacher and master, had been here to address you to-day, his discourse, alike by its form and by its content, would have charmed and inspired all seriously-minded hearers, and yet his modesty would not have allowed him to reveal himself in his true light as one of the greatest physicians, and probably also one of the greatest scholars, of his time. My personal debt to Gairdner is manifold, and it is by no means the least part of it that he disclosed to my mind the fascinations of medicine as distinguished from surgery, which had previously been more the aim of my professional studies. Not that he made me like surgery the less, but he made me like medicine still more, and this change in my inclinations I attribute to the systematic lectures which I heard him deliver in this class-room twenty-seven years ago.

One very obvious reason for abandoning the inaugural address is the difficulty of finding something fresh and appropriate to say, year after year, on such occasions. Even Gairdner, with his extraordinary fertility of intellect and language, was conscious of this difficulty. I was recently looking through three addresses of this kind which he published in pamphlet form some thirty years ago. The first was delivered in Edinburgh in 1855 or 1856, the second in Glasgow in 1866, and the third also in Glasgow in 1882. The intervals therefore extended over ten and sixteen years, and yet in the third address Gairdner says: "There is much of what falls to be spoken, which could only be spoken in similar, if not identical, words to those already used."[1] Those who knew Gairdner, however, know that he was easily capable of surmounting any difficulty of this nature.

Medicine is one of the progressive sciences. It is to be ranged with those which are still in process of evolution, and in the case of medicine this evolution is in the main, and without any doubt, in an upward direction. The beneficent powers of medicine are constantly being enhanced, so that among the civilised races the warfare waged by men against disease is assuming a more and more promising aspect; and, indeed, the successes already attained furnish us with the strongest ground for encouragement to persevere in the contest. The progress made in recent years by medicine—using the term in a comprehensive way—is immense, and represents the saving of many thousands of lives annually in Great Britain alone. The Right Hon. John Burns, M.P., recently pointed out that in the three years 1909-11, 772,811 fewer deaths occurred in England and Wales than would have occurred if the death-rate had been similar to the average death-rate of the years 1871-80.[1] Here, then, we touch upon what seems to furnish an eminently suitable subject for an introductory address such as might be delivered once at least by every occupant of a scientific chair—namely, a summary of the progress made by the science in question since the date of the last address of the kind. What an interesting and instructive history it would make if we had a complete set of reprints of such addresses delivered in succession by all the occupants of this Regius Chair of Practice of Medicine, beginning with the year of its foundation in 1637, or even, let us say, with the time when Queen Anne, of gracious memory, provided it with an endowment exactly two centuries ago! How pleasing to study the contributions of such different men as Cullen, Joseph Black, Gairdner, M'Call Anderson, and Samson Gemmell!

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[1] *Medical Education, Character and Conduct*, Glasgow, 1883, p. 6.

It is not my purpose, however, to make this present discourse purely historical, and one good excuse for this determination is that this aspect of medicine has been dealt with at considerable length quite recently at the meetings of the Seventeenth International Congress of Medicine. I would specially recommend you who are interested to read the addresses of Sir Thomas Barlow, President of the Congress; and of Mr. John Burns, M.P., President of the Local Government Board. These will give you some idea, and a very striking idea, of the great progress of the healing art since the Congress last met in London—that is, since 1881—or within the course of a single generation. They will also introduce to you, by name at anyrate, the leaders of this advance—those men of brilliant intellect, of keen insight, of untiring industry, and of indomitable patience, who have captured from the foe, as the case may be, either first-class fortresses which have long resisted the attacks directed against them, or out-lying positions whose occupation permits of a more effective assault upon the principal stronghold of the enemy in that region.

Let us glance, however, at some of the steps by which the science and art of medicine have advanced. Consider the revolution brought about by the application of the methods of percussion and auscultation to the chest, enabling us to study the actual condition of the heart and lungs in the living subject. The former method, which had previously been employed in abdominal diseases, was extended to chest affections by Auenbrugger in 1761, though its value was not fully recognised till Corvisart published a translation of Auenbrugger's essay in 1808. The method of auscultation was discovered by Laennec in 1816. Think of the daily routine of clinical investigation which is the natural development of the teaching of Richard Bright in 1827, with regard to the connection of dropsy and albuminuria with changes in the kidneys. The invention of the ophthalmoscope by Helmholtz in 1851 enabled us actually to look upon blood-vessels of the living body, and by studying the condition of the fundus oculi to gain valuable assistance in diagnosis, especially in diseases of the blood, kidneys, and nervous system. The introduction of the clinical thermometer enabled us to recognise and to treat safely and successfully by the cold bath a considerable proportion of the cases of that very formidable condition, rheumatic hyperpyrexia, and it has enabled us to study with far greater precision the course of febrile diseases, such as enteric and phthisis. Widal's test for the serum of enteric is a product of the science of bacteriology—a science which was in its infancy in my student days, and still far from maturity when I was studying it in Koch's laboratory twenty-four years ago. The test is not only serviceable in confirming the diagnosis in a suspected case, but it is now perhaps of even greater value in the detection of so-called "carriers," those individuals who act as permanent hosts of the specific bacillus, and as centres from which infection spreads in the community. In Wassermann's test for syphilis—a test which is only a few years old—research has furnished us with a potent instrument of diagnosis, which may be expected to throw light on the etiology and distribution of various morbid conditions, besides giving a clear indication for the employment of the most powerful antisyphilitic remedies.

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[1] *British Medical Journal*, 16th August, 1913, p. 363.

Imagine how handicapped we should be nowadays if we were deprived of the use of the *x*-rays, discovered by Roentgen as lately as 1895. Let me just mention the polygraph and the string-galvanometer by means of which Mackenzie, Einthoven, and others, have revolutionised our knowledge of the action of the heart. Neurology and bacteriology, each of them fit matter for the study of a busy lifetime, are quite modern developments. In connection with the former the name of Hughlings Jackson, and with the latter those of Pasteur and Koch, have earned undying fame. Lister's work, which revolutionised surgery, has also been of great value to medicine. If we turn to the question of progress in the prevention and treatment of disease, how much poorer would we be, and how appalling would be our present state, if we knew nothing of anæsthetics to prevent the pain of operations, or of antiseptic surgery to prevent pain and death after accidental and operative wounds, or of vaccination against small-pox. Though quinine in the form of Peruvian bark, or Jesuit's bark, has been known as a remedy for malarial fever for centuries—for cinchona was introduced in 1640—it was the quite modern discoveries of the infecting organism, and of its modes of transmission, that led to those sanitary measures which can transform a fever-stricken territory of deadly reputation into a safe and fitting holiday-ground for the white races. The introduction of salicylic acid in the seventies as a remedy for rheumatic fever inaugurated a new epoch in the treatment of that disease. In the early nineties the very name of diphtheria was enough to inspire dread; but the antitoxic treatment made available by the work of Behring and Kitasato has in great measure robbed the disease of its malign powers. Dysentery also appears to be yielding to recent methods of treatment. Salvarsan, discovered only a few years ago by Ehrlich and his associates, may yet do much to free humanity from one of its greatest scourges, that disease which is peculiarly liable to punish the innocent with, or instead of, the guilty, and which, in countless instances, visits the iniquity of the fathers upon the children.

As students of such a science and professors of such an art, we have to beware of undue elation on the one hand and of undue pessimism on the other. With the record of so great progress and so many achievements, the inexperienced might suppose that we are well on the road to perfection, and that there is not much more to be learned; whereas this is very far from being the case. To the skilful and the diligent there are innumerable possibilities of achievement, such as will bring not only fame and, in many cases, fortune, but also the far higher satisfaction of saving human lives, and diminishing the sum-total of human suffering and sorrow. On the other hand, medicine as a science is making greater and greater demands upon its devotees. Knowledge grows so quickly that it needs constant attention to keep pace with it; and the sacrifice of much else that is interesting in life is required of one who wishes to be a conscientious student or practitioner. Of course, as facts accumulate, they tend to become arranged in an orderly manner, and as the science thus becomes organised, the study of principles replaces in great measure the study of details, with corresponding relief to the memory and pleasure to the intellect.

According to Robert Burton, Pliny reckoned that the number of diseases to which mankind is liable is 300.[1] Now, if we allot two or three diseases each to my colleagues who lecture on diseases of the eye, diseases of the throat and nose, diseases of the ear, diseases of the skin, and gynaecology, and divide the remainder between the Professor of Surgery and the Professor of Medicine, you will understand the buoyancy of spirit and the sense of confidence with which a student might, under these circumstances, embark on a course of practice of medicine. But now glance at the table of contents of a good modern text-book, and see how different is the lot of the unhappy student of the present day. Fortunately, however, as years or centuries pass, the change is not invariably in the same direction. Take the case of the pulse, for instance. We moderns recognise a pulse of large and small volume, a pulse of high and of low tension, a wiry pulse, a pulse of unfilled arteries, an intermittent or irregular pulse, and possibly a few others. Roughly speaking, there may be a dozen varieties; at least I think I may promise that you will not be expected to identify more than that number at your final examination. But it must be admitted that such skill is poor indeed in comparison with the subtle refinement of former times. Not only the number but the names of the varieties were sufficiently astonishing: "ardent," "bounding," "critical," "deep," "formicans" (like the creeping of an ant), "myurus" (a sinking pulse, diminishing like a mouse's tail), and so on. And yet it has been pointed out by Galabin that "our old physicians never quite attained the skill in pulse-feeling of which their Chinese colleagues boast, who pretend to distinguish upwards of three thousand varieties of pulse."[2] I am afraid there is indeed such a thing as a lost art.

Among the *medical problems that press for solution at the present time* are those that relate to infant mortality, the infections (including tuberculosis, syphilis, pneumonia, and rheumatism), cancer, arterial degeneration, Bright's disease, the severer types of anaemia, and alcoholism. The methods of dealing with these must vary according to circumstances.

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[1] *Anatomy of Melancholy*, part I, sect. i, sub-sect. 2. "Pliny reckons up 300 from the crown of the head to the sole of the foot; elsewhere he saith, *morborum infinita multitudo*, their number is infinite."

[2] D. J. Hamilton, *Text-Book of Pathology*, 1889, vol. i, p. 699.

and must, to a large extent, be preventive in their nature. *Infant mortality* exists in our midst to a degree which ought to stir the sense of humanity in us to its depths. Last year (1912) in Glasgow, 2,667 infants died in their first year of life, which is equal to a death-rate of 122 for every 1,000 births. It is a familiar experience when investigating the case of a working-class woman in the wards of the infirmary to find that four, six, or eight of her children have died at some period of childhood. Now, when we bear in mind the discomfort and sometimes serious ill-health of pregnancy, the suffering associated with childbirth, the attendant risk to the mother's life or to her subsequent health, and the expenses entailed on a poor household, we may realise how important it is, both to the family and to the State, that if a child *is* born, it should get a reasonable opportunity of growing up and becoming a useful member of society. This great infant mortality is very largely due to the poverty of the homes, and to ignorance or carelessness on the part of the parents. Valuable agencies have already been put in operation to remedy the latter condition of matters, but the poverty that involves a large part of the labouring classes is still terrible to contemplate, and presents itself as an urgent question for society as a whole, as well as a problem whose solution is worthy of the devoted efforts of the finest intellects.

Tuberculosis kills nearly one in ten of those who die in England and Wales, and nearly one in eight [1] of those who die in Glasgow. With proper conditions of life for the whole population—and this means good food, good clothing, good housing, and good habits—and with a proper milk-supply, the frequency of this disease ought to be enormously reduced within the next thirty years. Apart from the mortality it causes, tuberculosis is a great evil because of the suffering and prolonged incapacity for work for which it is responsible.

Take again the question of *rheumatism.* A large proportion of the cases of heart disease which come under our notice owe their disability to rheumatic valvular disease. It is quite true that in salicylic acid we have a specific remedy which speedily puts away the fever and pains of acute rheumatism, but the heart is often attacked by rheumatism of an insidious and subtle kind, so that serious damage may be done to a valve long before symptoms arise which lead the patient to consult a medical man. This shows the importance of efforts at prevention.

Arterial degeneration is one of the commonest causes of death among people who have reached or passed the age of sixty in good health. It shows itself by its effects upon the brain or heart or kidneys, according to the organs whose blood-supply is specially interfered with. This arterial degeneration is a recognised result of the wear and tear of life, but it is probably accelerated by a succession of slight injuries inflicted on the vessel-walls by infections such as rheumatism and enteric fever.

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[1] 1,545 out of 12,760 deaths from all causes in 1912.

Pneumonia is another very common and very formidable infection. In recent times it has shown a tendency to dispute with phthisis the position of being the most common cause of death.[1]

Finally, with regard to *alcoholism*, the tide has obviously turned, but as our national drink bill is still about £160,000,000 per annum, and as alcoholic excess is the cause of an incalculable amount of mortality, suffering, and incapacity for duty, it behoves us as a profession and as individuals to consider carefully our proper attitude towards this serious question.

To some here it may seem a bold thing to contemplate with any degree of hopefulness the probability that certain diseases which at the present time cause many deaths may be abolished altogether, or reduced to a position of relative insignificance in the mortality statistics. Yet this is no unreasonable optimism, as past history, and even the experience of the present generation, can testify. Take the case of *scurvy*, which became a perfect plague to navigators when, in the fifteenth century, the revival of learning stimulated the desire to visit foreign lands, and led to the undertaking of protracted voyages. In 1498 Vasco da Gama lost 55 of his men in a short time through a malignant attack of this disease. As late as 1780, Admiral Geary, in command of the Channel Fleet, had to put back to England with 2,400 men down with scurvy. This sort of thing was due to the defective provisioning and hygiene of the ships, and the British Navy set the lead in reform. In 1795 Blane drew up a set of rules for provisioning British ships of war, and the result was most satisfactory. Nowadays it would be a grave reproach to those responsible for provisioning a ship if scurvy broke out among the crew, apart, of course, from shipwreck or other conditions of an altogether abnormal character.

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[1] Of the 12,760 deaths which occurred in Glasgow in 1912, 1,378 (or 10·8 per cent.) were due to pneumonia. The deaths from phthisis in the same year numbered 1,034 (8·1 per cent.), and those from other forms of tuberculosis 511 (4·0 per cent.).

Look again at the infections—diseases due to living organisms—and see what has been already accomplished. *Leprosy* was formerly prevalent in Britain, and leper or lazar houses were scattered over the country. There were more than a hundred in England. Towards 1500 the disease was rapidly declining in England, but in Scotland it survived till the beginning of the last century.[1] The exact causes of the disappearance of leprosy as an epidemic disease in Britain cannot be stated, but it is probable that segregation was one.

Small-pox ought to be entirely eliminated by vaccination, followed after a number of years by revaccination. It was estimated some time ago that the average annual death-rate from small-pox in England and Wales was one-seventieth of what it was before Jenner's great and beneficent discovery.

Malarial fever, which used to be very prevalent, is now seldom acquired in Britain. Its diminished frequency is no doubt due in great measure to the improved drainage of the land.

Typhus fever used to prevail in our large cities to a formidable degree, and played havoc among medical students at a period removed from the present by only a few decades. Some of the names it has had, such as camp fever, ship fever, and hospital fever, are sufficiently indicative of its malign tendencies and sinister reputation. It is now a comparatively uncommon disease. Thirty-four cases were recorded in Glasgow last year, with 2 deaths. This mortality is at the rate of 3 per million living, whereas the death-rate in the period 1881-90 was 40 per million. The decline in this disease may be attributed to the work of the Health Department of the city, particularly in providing fine hospitals for the accommodation of those affected, and in dealing in appropriate fashion with the slum-foci in which the cases take origin.

Turn once again to the case of *tuberculosis*, which, chiefly in the form of tuberculosis of the lungs, is the most common cause of death in Britain. When Queen Victoria came to the throne in 1837, the death-rate from phthisis in England and Wales was 3,960 per million living, per annum. In 1910 it had fallen to 1,015, or little more than one-fourth of the earlier rate. In Glasgow the phthisis death-rate, half a century ago, was 4,094 per million. Last

[1] An indigenous case was seen in Shetland in 1798, and one was seen in Edinburgh in 1809.

year (1912) it was 1,318—less than one-third of what it was in the early sixties of last century.

With such facts before us we may well take courage. Supposing we make progress in the directions which, in the light of our present knowledge, appear to be most likely, what may we expect to happen in our own city of Glasgow? Last year the number of deaths registered as occurring in this city was 12,760.[1] Of these, zymotic diseases (small-pox, diphtheria, enteric, typhus, scarlet fever, cerebro-spinal fever, measles, and whooping-cough) caused 1,080; puerperal fever, erysipelas, and other septic diseases, 177; tuberculosis of the lungs, 1,034; other forms of tuberculosis, 511; rheumatic fever, 9; pneumonia, 1,378; influenza, 42. All these together constitute 33 per cent of the whole. In theory they ought all to be preventible, and therefore to be prevented. There is no doubt, moreover, that of the remaining deaths many were due to theoretically preventible causes. It is, accordingly, easy to understand how, by an enlightened and enthusiastic co-operation on the part of the health authorities, the medical profession, and the lay public, an enormous reduction might be made in the annual mortality of Glasgow. The evil influence of alcoholism in causing fatal disease of the liver and other organs, and in diminishing the resisting power of the tissues to pneumonia, tuberculosis, and other infections, cannot be stated. Recorded figures, such as those of the Registrar-General, represent a mere fraction of the actual, as any man of the world knows. Almost everyone, however, can do something to make alcoholism less common than it is, and it is an altogether gratifying sign of the times that total abstinence is now so prevalent among our students.

The deaths from cancer in Glasgow last year amounted to 731, or 5·7 per cent of the deaths. Whether cancer is microbic or not is still unknown, and, except by complete extirpation of the seat of disease, it is rarely possible as yet to cure it. But at any moment we may hear of the discovery of a cure for one or more of these diseases of which I have been speaking. As Mr. A. N. Whitehead points out, in his recently published *Introduction to Mathematics*,[2] it is "a fact which is being continually verified in the history of knowledge, namely, that some of the greatest discoveries are to be made among the most well-known topics." He makes this remark in connection with Descartes' epoch-making conception of the application of algebra to geometry, an idea which occurred to the great philosopher one morning in the seventeenth century as he lay in bed. At that time geometry had already been studied for two thousand years, for Euclid was born about 330 B.C., and even he only systematised and extended the work of a long series of predecessors. After his time geometry was made the subject of study by generation after generation of mathematicians of diverse race and training and circumstance—Egyptians, Greeks, Arabs, and Germans—before Descartes hit upon the method of co-ordinates.

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[1] 13,797, or, after making certain corrections for deaths in institutions, 12,760. For Glasgow statistics, see the *Report of the Medical Officer of Health*, 1912.

[2] London: Williams & Norgate, p. 114.

To a certain extent, and in a small way, we have an analogy in the recognition of the *ankylostomum duodenale*, a small nematode worm, as the cause of a dangerous form of anæmia. Epidemic anæmia was met with in French miners more than a hundred years ago (from 1803-4 onwards), and in the tropics the disease was known for several centuries before its nature was understood. The worm itself has been known for three-quarters of a century (since Dubini discovered it, in Milan, in 1838), but some fifteen years more elapsed before the connection between the worm and the anæmia was established through the work of Bilharz and Griesinger in 1853 and 1854. It was much later still, namely, in connection with the deadly outbreak among the workers at the St. Gothard tunnel in 1880 that Perroncito, of Turin, demonstrated the truly formidable *rôle* played by this parasite. Perroncito further recommended that the ova of the ankylostomum should be sought for in the evacuations of the French miners, and the result was positive. Before Perroncito's discovery, the anæmia of French miners was put down to various causes, such as the high temperature and the foul gases in the mines.

And now, having spoken at some length about our profession, about its past record, and about the duties that lie awaiting its attention, it is perhaps right that I should refer to the personnel—to the men who are in the ranks, and who are enlisting as recruits.

We are warned as to the danger of our position when all men speak well of us. In former times this danger was even less threatening than now. Burton says: "According to the Dutch proverb, a new physician must have a new churchyard; and who daily observes it not? Many that did ill under physicians' hands, have happily escaped, when they have been given over by them, left to God and nature, and themselves."[1] He also quotes the saying: "More danger there is from the physician, than from the disease."[2] These remarks and opinions, however, take us back hundreds of years, to semi-barbarous or barbarous days, and we can now confidently regard ourselves as followers of a profession which is held in much respect in civilised countries. This of itself is a sufficient reason why we should do our utmost, by living upright and useful lives, to maintain its honour, and to represent it before the world in a worthy fashion. We must of course be careful not to take too seriously those self-disparaging observations which will at times escape from the lips, or even from the pens, of medical men themselves, under the emancipating licence always accorded to convivial meetings.[3]

There must be many in the profession who have had a hard struggle to meet the financial requirements of their medical curriculum, in addition to carrying on the necessary studies; but we may take it that the great majority of medical students have now a perfectly fair opportunity of becoming good average practitioners, and that many of them, if they chose, could make themselves better than the average. The qualities that make for usefulness, and for all that is implied in the expression "honourable success," are pretty much the same for students and for practitioners, with one important difference. While you are students, your work is always ready to your hand; it has previously been planned out for you by others, and you have no worry in thinking what you should do. After graduating, things are often different, and you have to determine what kind of work you wish to do, and when and where to begin it, and sometimes you have also to wait for it.

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[1] *Anatomy of Melancholy*, part II, sec. iv, sub-sec. 1.

[2] *Loc. cit.* Caustic utterances, however, have not always been confined to the laity. One cynic, who must have had an unfortunate experience with one or two of his patients, has remarked that gratitude is to be looked upon as a symptom of the disease, which may be expected to pass away as the patient recovers.

[3] Let me instance the poem by a former Secretary of the Glasgow Southern Medical Society, describing the Society's summer excursion of 1877, in the course of which he says—

"The city deaths fell four per cent
That day the forty doctors went
To dine at Tillietudlem."

See J. Dougall, *Historical Sketch of the Glasgow Southern Medical Society*, 1888, p. 43.

For both student and practitioner, it is of the greatest importance to practise the art of observation. With some, this is a great gift. By all, it can be deliberately cultivated. In the study of medicine you should perseveringly endeavour to train the senses of sight, hearing, touch, and smell. But these powers, whether trained or still untrained, must be put into operation. Sir Wm. Gowers somewhere recalls a dictum of a great clinical teacher, the late Sir Wm. Jenner: "More mistakes are made, gentlemen, many more, by not looking than by not knowing." This is a saying which I often quote to my students, and I would emphatically recommend it to you. You may, by looking at the patient's skin, discover that herpes zoster is the cause of the pain for which he has been unsuccessfully treated by somebody else, who did not take the trouble to look. By looking at the fundus oculi with the ophthalmoscope, you may find the changes indicative of advanced kidney disease, and thus explain the obstinate vomiting or severe headache which has been put down to some less serious cause. By examining the breast and finding in it a tumour, of which the patient may have made no complaint, you can account for the occurrence of agonising pains in the lower limbs, resulting from a metastasis in the spine. The detection of a slight angular curvature of the spine in the dorsal region may reveal the true nature of obstinate pains at the lower ribs. Similarly, an examination of the pupils, of the lower bowel, of the secretion of the kidneys, or of the blood, in cases where these investigations have not yet been made, and where the symptoms have hitherto been of a puzzling character, may immediately throw light upon the true nature of the disease, and help to further your own reputation as a careful and skilful practitioner, in addition to enabling you to apply the best treatment. Of course, in examining patients, you must always have consideration for their feelings and their sufferings. You should never cause unnecessary pain or fear, and in practice, if one exercises sufficient tact and kindliness, it is remarkable how little difficulty one meets with in this direction.

We get a good illustration of the value of observation, both for the science and in the practice of medicine, by reverting to the history of our knowledge of ankylostomum anæmia. In this disease the mature worms live in the intestine, and the ova of the female are discharged in immense numbers in the evacuations of the host. The ova develop in water or damp earth, and the resulting larvæ have then to find their way to the alimentary canal of the new host, the home of their adult life. How do they get from the damp earth to the intestine of the new host? The natural explanation is that the new host swallows them, either in contaminated drinking water or along with food conveyed to the mouth by soiled fingers. Yet actual observation has shown that this explanation, self-evident as it seems to be, is incomplete, and possibly almost entirely wrong. Looss discovered in 1898 that the larvæ penetrate the skin, and it is now known that the usual route by which they reach the intestine is through the skin, into the veins, and so to the heart; thence to the lungs, where they leave the pulmonary capillaries and enter the alveoli; then up the bronchi and trachea to the larynx, and then down the gullet and through the stomach to the intestine. Were it not that this explanation has been fully established by experiment and observation, it would have seemed too ridiculous to put forward in place of the other.

As indicating the practical importance of the question, and at the same time the serious extent to which this pest prevails in certain parts of the world, I may mention that it was estimated last year that in the Island of Porto Rico the total number of cases was now not more than 100,000, as compared with over 500,000 in 1904. It was found, moreover, that, to combat the spread of the disease, the main thing was to prevent skin infection ("ground itch"), a purpose which was not always easy of accomplishment. For instance, in 1910, when troops had to march across muddy lowlands, the muddy water got in between the shoes and the leggings, and the larvæ in this way got access to the skin. The total death-rate in the island has been reduced to half of what it was before "anæmia dispensaries" were introduced.[1]

That prince of investigators, Erhlich, has recently stated that the successful issue of such researches as the one on which he was recently engaged depends on four principal factors. These are patience, skill, luck, and money.[2] By "patience" I understand "patient work," though it may be that Erhlich takes the need of work for granted. Be that as it may, work is part of the lot assigned to normal humanity.

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[1] *The Lancet*, 20th September, 1913, p. 869.

[2] Address on "Chemiotherapy" at International Congress of Medicine. See *British Medical Journal*, 16th August, 1913, p. 353.

and it behoves us, for our own good as well as for the sake of others, ever to keep this in mind, and to bear the yoke from our youth onwards with courage, patience, and perseverance. Students of Carlyle know how emphatically he preached the gospel of work, but to those of you who would like to have it enunciated in more modern, more inspiring, and more cheerful terms I should recommend Sir Wm. Osler's beautiful and impressive address on "The Master-word in Medicine."[1] The master-word is work, "the true philosopher's stone;" the influence that makes "the stupid man . . . bright, the bright man brilliant, and the brilliant student steady;" the force that is "directly responsible for all advances in medicine during the past twenty-five centuries."

To different individuals, of course, Erhlich's four factors of success are allotted in very varying degree, and a deficiency of one factor may be largely compensated for by a particularly rich endowment with the others. In any case, a man can only be responsible for the talents actually committed to him.

In these days of specialisation, a man who wishes to make a name for himself by advancing a science or an art has usually to specialise in his work. I think you will find this brought out in the life and work of Hughlings Jackson, who revolutionised our knowledge of the functions of the cerebral cortex. The specialisation that is appropriate to your student days is different, and I shall simply explain by pointing out that you cannot expect to be the best man in your classes, the best speaker at the Medico-Chirurgical Society, the best golfer, the best bridge-player, and the greatest authority on recent fiction and on the modern drama—all at the same time. The two first are rightly to be aimed at, an outdoor recreation is desirable, and healthy fiction in tonic doses is permissible, but the greatest circumspection should be observed in your relations with the others.

Another matter of importance for a medical man is to have what is called "a good manner." This resembles the power of observation in being to some extent a gift, and also in being capable of cultivation. Several elements enter, or ought to enter, into the conception of a fine manner. Besides tidiness of person, ordinary courtesy and politeness, and the ability to avoid rubbing the patient or his friends in the wrong way, there is the power to inspire the patient with the conviction that you know your business thoroughly; and there is, in the highest development of this talent, the ability to convince the patient, without the least appearance of exercising pressure, and even in opposition to his preconceived notions, that the line of treatment you advocate is the best he can submit to, so that he, not of necessity, but willingly and cordially, co-operates with you in getting the treatment carried out. The more richly a medical man is endowed with this gift, the more absolute the necessity that he be perfectly faithful and conscientious in studying the best interests of those who entrust themselves to his care.

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[1] *Aequanimitas, with other Addresses to Medical Students, Nurses, and Practitioners of Medicine.*

Granted, then, the right ambition, and honest work devoted to its realisation, the large majority of you who are medical students may look forward to becoming fully-fledged practitioners within the next few years, recognised by the State as qualified to judge when and how to use knife and drug for the benefit of suffering humanity. It is true that medical students are not all destined to spend their working lives as practitioners of the healing art. Some, either after qualifying or without qualifying, are led aside by the superior enticements of other callings or pursuits. On the other hand, for those who stick to medicine, there are many possibilities. Many opportunities lie open to good average men for the commencement of a career which will be honourable and useful, and may lead to fame and fortune. Some will enter the Public Services—the Navy, the Army, the Indian Medical Service, or the Colonial Medical Service. Numerous appointments are available in connection with public health work in Britain. Some may follow in the footsteps of that great Scotsman, whose centenary was celebrated by this city and University in the present year, and devote their lives in other lands to one of the noblest services of humanity. Others, again, may engage in certain forms of research work, which, if successful in its aims, may lead to the saving of countless human lives, but which involves risk, as regards health and life itself, to the investigator. A goodly roll could be made up from the names of those who, even in recent times, have thus sacrificed their lives at the post of danger to which duty called them. Some one may manage to invent a pill or a powder, and get it called by his name—a very doubtful honour nowadays. But it is unquestionably an honour at the present time to have one's name conferred on a disease, and this great distinction has come to at least one well-known graduate of Glasgow University: I mean Sir William Leishman, whose father was Professor of Midwifery here when I was a student. Some of you will probably embark on hospital and teaching work at home, hoping to have a share in influencing and training a future generation of medical students. This will lead you to specialise in some department of medical work, but a preliminary experience of general practice is an excellent thing for you all, whatever it may be for your patients.

But after all, the medical profession is not made up of professors or research men or medical officers of health. What we want, to quote certain words used by our Lord Rector in another connection, is "a steady supply of honest, plain-sailing men, who can be safely trusted with small sums, and to do what in them lies to maintain the honour of the various professions."[1] It is the general practitioner who answers to these requirements in medicine. It is he who truly represents the profession in the eyes of the great bulk of the laity, and on whom the honour of the profession in the main depends. These men do an incalculable amount of good in the land. In virtue of their calling, they are welcomed in the sick-room by all classes of the community, rich, comfortable, and poor: and strange and tragic family secrets come within their ken. Even in general practice, however, true genius will sometimes escape from its concealment, and scientific researches carried on in the spare minutes of a busy life may lead to epoch-making advances in medical science.

As the son of a general practitioner, and as having been personally engaged in general practice in town and country, I know the life well: I understand its pleasures, hardships, and anxieties, and I admire it. To a worthy man it brings influence, respect, and numerous friendships. It ought, if health is maintained, to bring a comfortable, if not a luxurious, income. It gives the opportunity of much service for others, and, from time to time, the supreme satisfaction of saving a life that had otherwise been lost.

I do not propose to draw up a series of rules for the conduct of your academic or professional career, but I should like you to bear in mind from the very first that, apart altogether from higher considerations, it means a great deal for the comfort and happiness of all the medical men in a community, and particularly in a small community, if they live in friendly relations with one another, and jealously guard against anything that could possibly be looked upon by any one of their number as unfair to him or his interests.

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[1] *Obiter Dicta*, first series, "Truth-hunting."

In an "Address delivered to the Glasgow University Medico-Chirurgical Society" in 1884,[1] when I was a medical student, Sir William (then Dr.) Gairdner enumerated nine qualities or endowments which he thought medical students ought to cultivate. That list is interesting to read, not only in itself, but as revealing so much of Gairdner's own mind and ideals. Sir William (then Dr.) Osler, in the address from which I have already quoted, enunciated three great lessons of life which we ought to learn. It is to me a noteworthy fact that these two great men have directed attention so unmistakably to the spiritual aspects of our professional life and work. Gairdner's ideal medical man is imbued with a deep sense of responsibility to God. One of Osler's great lessons to be learned by, and to be illustrated in the life of, the practitioner of medicine, is the essence of one of the most serious warnings uttered by our Lord. Following the example of such leaders, I would say to you younger men who intend to join us seniors in working for the sick, that without religion no man can quite attain to the best of which he is capable.

NOTE ON A CASE OF CARCINOMA OF THE VERMIFORM APPENDIX IN A GIRL, AGED 20 YEARS.

By SIR GEORGE THOS. BEATSON, M.D., K.C.B.,

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to the Glasgow Royal Cancer Hospital.

ON 27th March, 1913, there was admitted to my female ward, Western Infirmary, Jessie M'F., æt. 20 years, suffering from what had been diagnosed by the family medical man as an attack of acute appendicitis. The history of the case obtained on admission was that on 21st March she had not felt well, and that the following day she had been seized suddenly with abdominal pain, at first situated in the epigastrium, but subsequently becoming generalised. No vomiting accompanied the pain. It was also stated that six years previously she had had a similar attack of abdominal pain, which had continued for two to three weeks. Beyond the fact that there had been on this occasion no vomiting, nothing very important could be elicited about this previous attack. The record in the case-book states that patient, when admitted, was fairly comfortable, the pulse being 72, the temperature 98·4°, and the respirations 18. The leucocyte count was 11,200. Examination of the abdomen showed tenderness over the appendix region with some local muscular rigidity, but no dulness on percussion. The state of the heart, lungs, and urine was normal. The usual palliative treatment was adopted of local warmth, arrest of intestinal peristalsis by Dover's powder, restricted diet, and avoidance of purgatives, and all the symptoms subsided.

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[1] Reprinted from the *Glasgow Herald* of 15th November, 1884.

On 11th April, as pulse, temperature, and blood-count were normal, I operated for removal of the appendix. The abdomen was opened by the longitudinal incision parallel with the rectus muscle and with its centre over M'Burney's point that I always employ. The appendix was found bound down by dense adhesions. These were separated, when it was quite apparent that there was a deep constriction in the middle of the organ, and that it was really in two portions, the one attached to the cæcum being bulbous and so dense to the touch that it felt as if it contained a concretion. The two portions were removed separately, and in the case of the bulbous basal portion the ligature was applied well on to the wall of the cæcum so as to avoid injuring in any way the supposed concretion when cutting through the appendix. The operation was completed in the usual way, and the wound in the abdominal wall closed.

On 13th April I was surprised to learn from the pathologist's report that the dense mass I had regarded as a concretion was a nodule of cancer. The following are the terms of the report:—"This appendix is the seat of a small carcinomatous tumour, which invades the muscular wall. There is well-marked evidence of past inflammatory change."—(Signed) John Shaw Dunn.

Through the kindness of Dr. Dunn the paraffin block made by him of the carcinomatous nodule was obtained, and further sections were made from it. These sections show some desquamation of the columnar epithelium lining the lumen of the appendix, the desquamation, however, not extending into the tubular glands. The lymphoid tissue is well developed. At one end of the sections the gland acini near the lumen of the organ show some proliferation, then a little deeper down the proliferation of the glandular epithelium becomes irregular with regard to the basement membrane, and deeper still are some poorly formed gland acini with numerous irregular clumps of cuboidal epithelial cells (carcinoma cells) lying amongst a very cellular fibrous tissue stroma. This carcinomatous infiltration is seen most markedly in the deeper parts of the mucosa, and extends out through the fibrous tissue of the submucosa into the muscular layers, lying for the most part between the circular and longitudinal layers. Dr. Harold E. Whittingham has kindly made me two drawings, illustrative of the condition found. Fig. 1 is a low power one of an oblique section through the appendix near its base, and Fig. 2 is a high power one showing the change from apparently normal gland acini to irregular formed gland acini with the still further subsequent stage of irregular clumps of carcinomatous cells. Examining the section shown in Fig. 1 more in detail it will be seen that the growth involves the mucosa at *A*, the submucosa at *B*, and the muscular coats at *C*. At first sight it would almost seem as if Fig. 1 was a section of the tip of the appendix, but this appearance is due to the obliquity of the section, which does not take in the whole diameter of the organ. Passing to Fig. 2, which is a high power drawing of part of the growth in the mucosa, there is seen the transition from more or less normal gland acini *A* to irregular formed acini *B* with their subsequent stage of irregular clumps of carcinomatous cells *C*. Consequently, the present case must be regarded as belonging to the group of spheroidal-celled carcinomatous tumours, and as being of the type of an adeno-carcinoma, the growth springing from the cells lining the gland acini. In this respect it does not follow the usual form of carcinoma found in the appendix, for in the large majority of such cases the growth is an *endothelioma*, the tumour originating in the lining cells of the lymphatics of the organ.

A case such as the present has not the rarity it would have had a few years ago, for the attention now directed to the appendix, and the opportunities furnished by operative work for the examination in the pathological laboratory of the removed specimens, have brought out the fact that while primary new growths of a benign kind are extremely rare in the appendix those of a malignant type are not uncommon.

The best summary of the literature and cases on record until 1906 is that given by Dr. H. D. Rolleston and Mr. Lawrence Jones in their paper on "Primary Malignant Disease of the Vermiform Appendix," read before the Royal

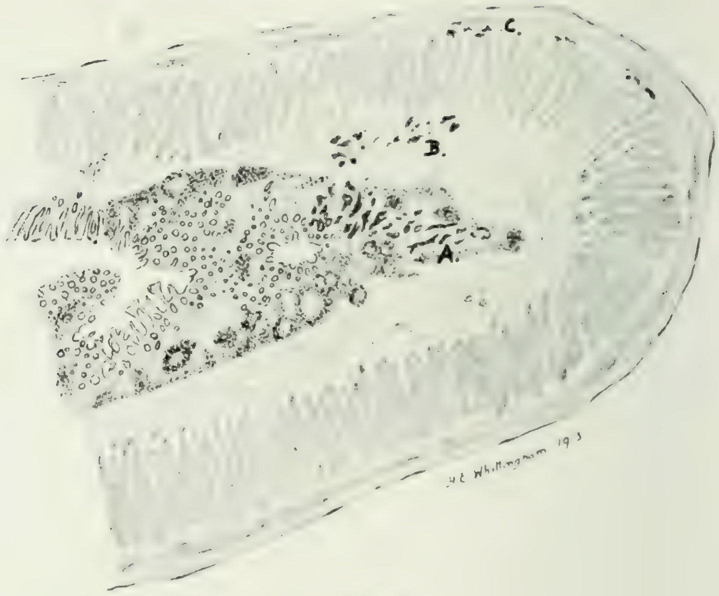

FIG. 1.

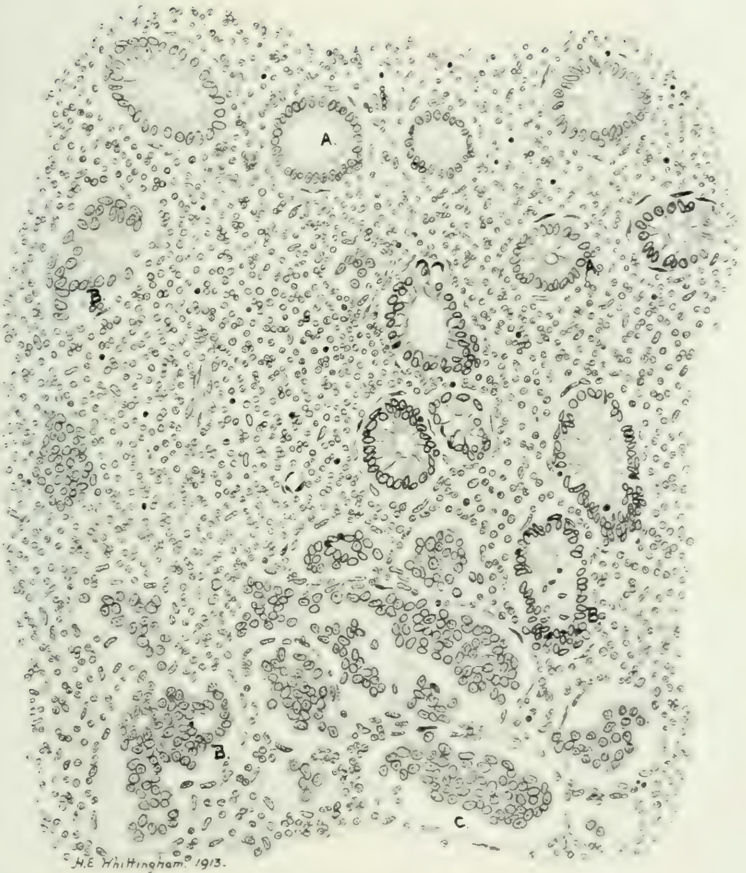

FIG. 2.

Medical and Chirurgical Society in February, 1906, and published in *The Lancet* for 2nd June, 1906. The outcome of the enquiries made by Rolleston and Jones is that 42 undoubted cases of malignant disease of the vermiform appendix had been established up to 1906, and that 37 (or 88 per cent) were carcinoma. Of these 37, there were 17 of the spheroidal-celled type with an average age incidence of 24·2 years, which was in marked contrast with the average age of 5 examples of primary columnar-celled carcinoma of the organ, which was 62 years, thus corresponding with the age incidence in carcinoma of the other parts of the intestine. Other points are dwelt on by Rolleston and Jones; one is that primary spheroidal-celled carcinoma of the vermiform appendix is peculiar in its structure and its benignant character, in both these respects resembling a group of cases of multiple primary carcinoma of the jejunum and ileum collected by Bunting. Another point is that no special symptoms are associated with the existence of a primary malignant growth in the appendix. The cases present the ordinary clinical history of appendicitis, and it is only the routine examination of the organ after removal that reveals the unusual condition present.

Since 1906 additional cases of carcinoma of the appendix have been published, as in *The Lancet* for 23rd October, 1909, and for 17th December, 1910, by Dr. Alexander Mills Kennedy, Assistant Pathologist to the Glasgow Royal Infirmary, and I understand that mine is not the only case that has been observed in the Pathological Department of the Western Infirmary. It presents no very special features, and is in keeping in its clinical history with those already observed. The age of my patient is noteworthy, she being in her twenty-first year; but the disease has been observed in still younger cases—one in a girl of 12 years being on record. My case being one of primary spheroidal-celled carcinoma, I hope it will share the favourable prognosis given by Rolleston and Jones in cases of that type, and that there will be no local recurrence or metastasis.

Before concluding this paper there are two points I would like to refer to on which it seems to me these cases of primary malignant disease of the appendix have a bearing. The first one is that they illustrate the importance of *irritation* in the etiology of the malignant disease, the new growth in these cases having its seat in the old inflammatory tissue of appendices previously diseased, just as epitheliomata are prone to develop in the scar tissue of burns. The second point is that differences of opinion exist as to whether or not the appendix is a *vestigial* structure. The appearance of malignant disease in it at the early ages noted would suggest that it is an obliterated portion of the colon, for one of the characteristics of this part of the intestine is the early age at which carcinoma appears in it. Rectal disease in the very young is a well recognised fact, and I have had a case of carcinoma of the colon in a boy, aged 11 years.

BYZANTINE MEDICINE: THE FINLAYSON MEMORIAL LECTURE.[1]

By Sir THOMAS CLIFFORD ALLBUTT, K.C.B., LL.D., D.Sc., M.D.,
Regius Professor of Physic, Cambridge.

(Concluded from p. 334.)

Well now in such times how was science getting on! With marvellous acumen the ancient Ionian philosophers had fixed upon air and motion as principles of biological function. I have elsewhere discussed what I have called "the pathetic search after oxygen"—pathetic because the modes of fire and "innate heat" could not but have remained for them a secret; their apprehension was so fine, but exact knowledge for them so unattainable. They apprehended that about the vital air there was some peculiar virtue, a virtue which they called spirit; and this spirit, or pneuma, Praxagoras acutely put in the arteries, though unfortunately he, and later physiologists, left in these vessels no room for other ingredients. Of the pneuma[1] and the Pneumatists I have written in my Fitzpatrick lectures, but here I must at least remind you of another strain of thought—the Pythagorean, which, reinforced by that wonderful genius, Empedocles, flowed from the Sicilian school, and, influencing Plato profoundly, did not leave Aristotle unaffected. Thence numbers and harmony flowed into physiology, but accompanied by other transcendent and ethical notions, unto an almost Pauline dualism between soul and body, and between the higher mind (*φρένες, νους*) and the lower (*θυμός*). However, if Anaxagoras gave the conception of development on laws inspired by *nous*, which inspired form, it was the Pythagoreans who practised the first investigations on the embryo. Alcmaeon dissected, and knew many of the minor parts of the body, such as the Eustachian tube; he had a glimpse of the origin of man by evolution from the lower animals by survival of the fittest, and spoke of the soul of plants. He also placed the soul in the brain, which Praxagoras perceived to be a development of the spinal cord; but this entity, in and before the days of the Abbess Hildegard, had wandered back to the heart again. This pregnant beginning of the great positive medical tradition, which, in the following centuries, verified and enlarged by the Hippocratic and Alexandrian schools, was brilliantly extended by Galen in the later Empire, was to fall back into the melting pot, and to issue (as we have seen) in the murky and lurid doctrines of dæmonism.

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[1] πνεῦμα, as life and breath, signifies two functions of one thing, namely, the soul (*ipsa animae spiritus*). Mind, say more than one of the church fathers, is soul's work. Galen, though an Eclectic, was no little of a Pneumatist.

I need not say that what happened to anatomy and physiology did not fail to befall other sciences. Astronomy had to submit to the calender. The Aristotelian cosmography was not the best which the Middle Ages might have accepted; it superseded the heliocentric system of Aristarchus and Hipparchus, who were greater men than Ptolemy. The church fulminated against any but a geocentric theory of the universe; and even the Aristotelian round ball of earth about which the fixed stars revolved in ethereal spheres was to shrink to the Syrian view of the earth as a disc encircled by the sea.

Psellus, as I find in his "Quaestiones Naturales," had got back to a round earth, and gives the sound old reasons for this opinion; but he asserts stoutly that the motions of the heavenly bodies "are not vital but physical."

The long controversy concerning the antipodes is well known; almost all the fathers, as we see down to Augustine Isidore and Bede, were against them. Albert of Cologne however accepted them, and Dante followed him.

But a worse perversion than Aristotelian and pseudo-Aristotelian cosmography was *Astrology*. This mischievous ally of magic came from Mesopotamia, it was heard of in Europe in the times of Alexander the Great, and is alluded to by Theophrastus; it penetrated into Rome under the Republic. Augustus gave some countenance to the fantasy, which was unfortunately adopted by the Stoics, although not only Horace and Juvenal, as is well known, but also many other authors, such as Sextus Empiricus and even Pliny opposed it. Ptolemy shaped it into a factitious science, and Frederick the Second played with it. Most of the church fathers, it is true, jealously denounced astrology: Tertullian, wrathfully, as polytheism. John of Salisbury assailed it, as, later, did Pascal and La Fontaine, until at last it was killed by Jonathan Swift.[1] The notion of transmutation of substances by a conversion of energy belonged in part to the division of form and substance: and from it issued the search for a transmuting agent. Plato had an idea of a relation of metals to the planets. The metals began to live and to have souls; each planet, if no longer a divinely animated and eternal being, was guided by deity (*θεοὶ κινοῦντες*) or spirit, or, for the Christians, by the finger of its angel.[2] The original substance was supposed in the East to be Mercury, but in Egypt it was Lead (Osiris); and it is curious to observe that, in our modern transmutation theory, lead is one term of the radium series, though not the primary.

Thus by easy steps we turn to chemistry. Astrology merged into *Alchemy*, to be itself transfigured by Geber, the greatest of the Arabs, into the fertile science of chemistry, as we learn from the well-known treatise of Bertholet. The most cursory reader of illustrated books must have admired the elaborate apparatus in the laboratories of the ancient alchemists.

Concerning *Biology*, all through the Byzantine and Middle Ages Galen was practically the only, but the infallible and the immutable guide. On the gamut of the four elements and four humours could be played a number of tunes so infinite that farther enquiry of nature became needless. Thus the admirable biological work of Aristotle and Theophrastus was forgotten or perverted; the "Physiologus"[3] and "Clavis" books, and fables and fantasies of biblical or rabbinical origin, took the place of observation; and Byzantine and medieval natural history, following too readily the example of Pliny, gave birth to the bestiaries and herbaries which, however quaint, curious, and naive to the antiquary, are from the point of view of science—or, indeed, of any normal mental activity—deplorable. Grotesque as science, the world of griffins, salamanders, phœnixes, unicorns, and basilisks, of elephants without joints, and of pelicans with bleeding breasts, was hardly redeemed by much charm of imagination. These medleys of monstrous allegorical and magical lore reached their lowest point in the seventh century, though there is always a remnant: in this century that interesting but shadowy person, Bishop Nemesius of Emesa,[1] held on more soundly to positive Hippocratic tradition: but from the seventh century to the Latin revival under Charles the Great the recovery was tedious and slow.

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[1] See Appendix to my Harveian Oration of 1900.

[2] The quintessence (*πεμπτον στοιχεῖον*) or fifth heavenly energy of Aristotle was imagined by Harvey to animate that wonderful planet, the heart (see my Harveian Oration for 1900).

[3] Dating from the second century A.D.: summaries first written in Alexandrian Greek and interpreted in biblical senses, many translations of which into Latin appeared in the Middle Ages.

And, during all this time, what was medicine doing? Well, medicine at best, in default of original or direct investigation, had entered upon the period of conservation of which I have spoken. Although between Celsus and Oribasius arose many original observers and practitioners in medicine, more especially in its surgical aspects, yet Celsus, as the custodian of Alexandrian medicine—especially, perhaps, of the school of Philoxenus—marks the beginning of the conservative as contrasted with the progressive periods: as Oribasius presents conservation in its fullest and most creditable light. Although on the division of the Empire many Greeks returned homewards, Rome still retained her "prestige:" and in well-to-do philosophical and conservative circles medicine won some honour. *Oribasius of Pergamum*, one of the last savants of the Alexandrian school, who lived during the latter part of the fourth century and was the personal physician of Julian, edited in seventy books a digest of medical and surgical works then extant: of these books only twenty-five remain. It is a compilation no doubt, but of its kind excellent: how excellent is discovered to us in the monumental edition of Daremberg and Bussemaker. For its sane and rational method, its learning and discernment, if not for literary art and concision, it may without injustice to Celsus, be compared with the *De Medicina*; but in its entirety the collection was far too unwieldy for ordinary uses, and Oribasius—moved thereto, it is said, for the education of his son—wrote a summary of the work—a "Synopsis"—which had only too perpetual a vogue. I say too perpetual, because it was the very popularity of these summaries and manuals, so abundant in the Byzantine and Middle Ages which, more than fire and sack, threw the original works of the Romano-Greek physicians and surgeons to oblivion and destruction. Thus Oribasius himself was the indirect cause of the loss of the works of many of his predecessors. Nevertheless, curtailed as are the works of Oribasius, they bear witness to the soundness and thoroughness of the medical education and tradition even of the later Greco-Alexandrian schools. And as to its literary ethics, although in this respect his example was but too soon neglected or ignored, he himself, as honourably as accurately, "verified his references," and duly gave to each one of his authorities what was his.

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[1] His περὶ φύσεως ἀνθρώπου was translated early into Latin, and mostly used in the Middle Ages. It was a learned blend of Plato and Christianity. He was well acquainted with Hippocrates and Galen. He opposed astrology and fatalism on the principle that knowledge depends on investigation of Nature (and of revelation). His physiology and anatomy are half Aristotle, half Stoic (Posidonius). He placed the mind in the fore-brain. He held that organic evolution had progressed gradually, without any sharp line, from beasts to Man.

Of his predecessors thus laid under contribution I may name—I can do little more—a few. Of such distinguished men were Diocles, Erasistratus, Mnesitheus, Meges, Philumenus, Asclepiades, Athenaeus, Agathinus, Archigenes (chiefly known to us in the less ingenuous pages of Aretaeus), Herodotus, Heliodorus, Antyllus, Philagrius and Posidonius, and many others whose names may be unfamiliar to some of my hearers, but whom you may take from me as among the chief of our Greek medical forefathers: some of them, such as Diocles, Erasistratus, and Philumenus, men of the great time whose every relic is precious.

And the later men embalmed by Oribasius should not be mere names to us: they were not mere encyclopaedists. In surgery especially Philumenus, Herodotus, Antyllus,[1] Philagrius and Posidonius, to mention but a few, had made great advances. We gather from Oribasius that Antyllus first described aneurysm, and operated on it by the double ligature. Philagrius, nearly one hundred years later, proposed extirpation. Antyllus not only describes tracheotomy—this had been done before—but gives good clinical rules for the practice of it, and for its use or omission. He operated on benignant tumours and hydatids, on glands, and on the urinary organs. According to Razes he extracted for cataract, and he performed plastic operations. Heliodorus,

[1] Antyllus, as I have urged elsewhere in an argument for the integration of medicine and surgery, was distinguished as a physician also. He wrote on hygiene and therapeutics from the methodist point of view.

under Trajan, advised torsion of vessels, operations for stricture, for scrotal hernia, and for resection of bone: and he performed amputations on an improved method. Thus it seems that hernia was for a moment taken more or less out of the hands of the peripatetic craftsmen, though in much later times we hear only too much of these ruffians.[1] Leonides, about ninety years after Galen, also operated for hernia: he tied and obliterated piles, and operated even on goitre. The two brothers Philagrius and Posidonius (under Valens) improved operation for stone. But of all these masters, not a few of them endowed with genius, we have but scraps and glimpses. And from them, as I have illustrated on a former occasion,[2] we may trace the history of antiseptic surgery through Salerno to the great Italo-French surgeons, through Roger, Hugh of Lucca, Theodoric, Lanfranc, William of Salicet, Guy of Chauliac, to Paré. And in this place I would not fail to mention *Publius Vegetius*, who flourished about the latter half of the fourth century. He has always interested me because, as a veterinarian, he was perhaps the founder of the study of comparative pathology: the study which, as I said in my Address in Medicine in this city in 1888, is yet to come to lift us out of a Ptolemaic or anthropocentric into a Copernican or universal medicine.

In the sixth and seventh centuries, if we have to descend upon compilers of less ability and scholarship, we may still be thankful to perceive that on the whole the physicians were comparatively free from the more superstitious corruptions: if infected by magical and fantastic influences they were not enthralled by them: yet such is their spell that even Alexander of Tralles, who was almost as a man born out of due time, as it were from the time of the greater Greeks, did not shake himself free from these enchantments.

With *Aetius*, of Amida in Mesopotamia, we commence with physicians of the Christian religion: Paul of Aegina and Alexander of Tralles were also Christians.[3] Aetius flourished about the middle of the sixth century in the reign of

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[1] See Dr. Ferrari's interesting study *Une Chaire de Médecine au XVe Siècle*, Paris, 1899, p. 141 *et seq.*; and many other records, *e.g.*, Mondeville passim. Montaigne in his travels, after a very interesting story of his visit to Felix Platter at Basel, witnessed such an operation for a hernia on a young girl, and remarks upon the roughness of the procedure.

[2] *Historical Relations of Medicine and Surgery*, 1905.

[3] Oribasius made his compilation to help Julian to declare that Medicine was not Christian, but wholly pagan.

Justinian, and so about the same time as Cassidorus and St. Columba. His collection is much scantier, and much less skilful, than that of Oribasius, and it is without his leaven of personal judgment. With medical tradition are mingled Christian mysticism, pagan superstition, magic formulas, methodist dogma, and the blind and narrow faith in Galen which faces the historian all through the Middle Ages down to Molière. The work contains sixteen books, but is usually called the Tetrabiblion, because in the manuscripts it was customary so to divide it. It deals with remedies pharmaceutical and physical, with venesection, diet, and prognostics; then follow the several diseases, ending with gynaecology chiefly taken from Soranus, probably through Philumenus. He is the first to mention turning in foot presentation, which seems not to have been practised again till by Arnold of Villanova and, in the thirteenth century, by the admirable Antonio Benivieni. He does not acknowledge his sources as did Oribasius, but his materials can be traced to Archigenes, a well pillaged man, Galen (on fevers, lethargy, &c.), Oribasius, Herodotus (on poisons and antidotes), Leonides (on the genital organs and the rectum), Philagrius (on the spleen),[1] Rufus (on the plague). Aetius gives a good description of diphtheria in children, emphasising the foulness of the pharynx, and the suffocation in laryngeal cases; also how in convalescence drinks may still return through the nose. He describes, moreover, an interesting case of a girl who, when apparently recovered, died suddenly after the fortieth day; an issue which we understand better than he could do. As the "Syrian angina," diphtheria was well known to physicians of greco-roman times—for instance to Archigenes (Aretaeus).

The surgical excerpts of Aetius are valuable, and can be traced to the best of his predecessors. He describes torsion, ligature, and traumatic aneurysm. The eye chapters, indeed, are excellent, except as regards cataract; better than in the Lydian Alexander. In eye diseases he seems to speak with some personal authority, and this lamp he carried forward to the great Arab ophthalmic anatomist and surgeon, Alhasen, whose "Opticae Thesaurus," like the works of Geber, give to Arab scientific literature far more than a derivative character. Like Soranus, he warns against the purulent conjunctivitis of the new-born. In dropsy he says that the kidneys may be hardened; that the liver might be hardened in ascites was known already.

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[1] We owe to Aetius almost all the little we have of Philagrius and Posidonius.

Alexander, of Tralles, in Lydia, is far too great a man to be dismissed in a paragraph. Born in the reign of Justinian, he was the youngest of five sons of Stephanus, an eminent physician in this thriving city. All his brothers attained distinction, and one of them was no less a person than the Wren of the sixth century, Anthemius, the architect of S. Sophia. Alexander was the greatest physician of the centuries after Galen until the revival of learning, and a polite scholar. He was no mere conservator, no mere compiler, but gave out of his own rich gifts, knowledge and experience. He often quotes Philumenus; and although his reverence for Galen was profound, he did not hesitate, notwithstanding, occasionally to criticise his great predecessor. But, as I have said, even Alexander was not untouched by the turbid spirit of the age, nor when natural remedies, as for hiccough, epilepsy, colic, or gout, had failed, did he refrain from betaking himself to magic. But why, one might have asked him, why take the trouble to procrastinate? Why waste time upon earthly medicine when magic was to be had?

Alexander, as a practical physician, dealt little with anatomy or physiology. His influence in the Middle Ages must have been widely beneficent, for Latin translations of his work were made before the ninth century. For his text we have many manuscripts, not the least of which is in our Library at Gonville and Caius College; but, as his works have been admirably edited by Puschmann,[1] it is less necessary for me now to dwell at length on their contents. His influence on the Middle Ages probably filtered through Salerno, where he was much studied; indeed, we may suppose that to Alexander the Salernitan school owed much of its sobriety and practical skill. For instance, we find that Gariopontus, the great ancient of Salerno, adopted Alexander's division of the Fevers, and used the same prescriptions for them. His influence is evident also in Roger of Salerno, in Gerard, in many of the writings in de Renzi's Collectio Salernitana, and so forward to Gilbertus Anglicus and the rest. I have spoken of the seventh century as the lowest period of culture in the Empire; in the eighth there was some little revival, due probably to influences from Bagdad and Syria; but this, feeble as it was, was checked again by the turbulence of the Iconoclasts under Leo the Isaurian, when probably some Greeks fled, among other places, to Salerno; South Italy being then, of course, a part of the Eastern Empire.

But I must hasten on, and to *Paul of Aegina*, who says plainly that he compiled and epitomised because doctors would not read the long-winded treatises of the ancients. He does not pretend to any originality, though it so happens that he in his turn, far away as he is from the "Cicero of medicine," Oribasius, preserves some very valuable materials, especially in the field of surgery. Oribasius nearly always gave his sources, Paul never: indeed, Paul did not hesitate to thus to assume to himself all extracts written in the first person. He helped himself freely from the collections of Oribasius; luckily, as it happens, for, jejune as Paul's renderings are, they supply some of the lost parcels of Oribasius—for instance, much of Antyllus—records which obtained a high authority in the Arabian and later centuries. The great Arab surgeon Albucasis, indebted as he was to Oribasius, found much material also in Paul. Before the invention of printing, not only did the compendiums such as those of Paul, Aetius, Athenaeus, Stobaeus, Photius, lead to the neglect and loss of original manuscripts, but led also to the loss of much of the better but larger compilations, as of Oribasius. Indeed, by a kind of suicide, it would seem that by his Synopsis Oribasius killed or mutilated his own ampler work. As Galen says, copying was costly: when the Egyptians forbade the export of papyrus, parchment was discovered, but it was expensive, so that manuscripts were few: and these few were preyed upon by moth, damp, war, and shipwreck. Galen's own library was burned in the fire of the Sacred Way; and too rarely, like Celsus immured in some cloister, did copies lie hidden for discovery by remote generations more worthy of them. There are rumours, indeed, of fouler play: that books were copied, and their bodies then destroyed by the thieves of their souls.

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[1] To whom I desire to express my obligations.

Paul, whose books, poor stuff for the most part, have for us this factitious value, seems to have practised in Alexandria, especially as a surgeon and obstetrician; accordingly, like Oribasius, he was a children's man. From Mnesitheus, Rufus, Soranus, Athenaeus, he describes their teething, convulsions, diarrhœa, aphthæ, and four cynanches; he seems, indeed, to have paid some personal attention to their cardiac disorders, though of course, in the lack of anatomical and physiological instruction, it could not come to much. His gynæcological book is lost. In medicine, "phrenitis" was distinguished from delirium. Gout was attributed to inability of the system to cope with excess, or relative excess, of food—a fault in the *θρεπτικὴ δύναμις*, sometimes due to overwork—and the perverted products were apt to fall especially upon weaker parts. Do we know much more about gout to-day?

But, I repeat, it is for their surgery that the excerpts of Paul are of most value: he was of a surgical bent, and the fuller and more interesting sixth of his seven books was devoted to surgery. So far as we can judge, he was indebted chiefly to Hippocrates, Soranus, Galen, Leonides, Antyllus. He does not mention torsion, but he knew the ligature: on the extraction of spear and arrow heads from wounds he is good; he observed the points of diagnosis for wounds of the brain, and of the several viscera: *e.g.*, hæmoptysis in wounded lung, and the signs of a wounded diaphragm. On fractures and dislocations he is excellent. He denied fracture by contrecoup, taught by Soranus. He gives the directions of Antyllus on tracheotomy; he dealt with nasal polypi, excised the tonsil, tapped the abdomen, and detected water in the joints. He resected ribs for empyema; he used the catheter; he cut for stone, and records good directions for washing out the bladder with an ox bladder attached to a catheter. He operated for staphyloma. His rectal and vaginal specula were fitted with expanding screws.[1]

If we are right in supposing that Paul studied at Alexandria, it must have been just before the pillage by the Arabs, and the consequent catastrophe of science and erudition; so we may be thankful for what he salved. But before, on the rise of the Arabian schools, I relinquish my story of the Greek medical authors, I may say briefly for the rest that during the eighth, ninth, and tenth centuries Greek medicine had fallen so far into decadence as to offer little to interest us. Theophilus the Protospatherius, an office in the Byzantine court, did indeed make some contributions to medical knowledge, especially in anatomy: the most important of these, whether his own or not, was the conception of the spine and skull as developed in correlation with that of the central nervous masses. His anatomy and physiology were wrested out of value by the arbitrary teleology which, as I have said, dominated the thought of the time.[2] But his great vogue in the Middle Ages was won, not by these merits, but by one of the chief of those books on

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[1] See Mr. Wellcome's Museum.

[2] His treatises *περὶ οὔρων* and *περὶ διαχωρημάτων*, a mode of diagnosis by the faeces, are in Ideler. Most of his work was copy or paraphrase of Galen, especially his *περὶ τῆς τοῦ ἀνθρώπου παρασκευῆς* from the De usu partium.

Uroscopy which took so extravagant a place in medieval diagnosis, and by a celebrated but fanciful book on the pulse.

Passing over certain negligible persons of this dark period of medicine, I may make mention of one other with whom, as Haeser says, this period may be concluded with some distinction—with *Johannes (the) Actuarius*, this, again, being the title of one of the court appointments. Although it would not be fair to his predecessors to accuse them of teaching that uroscopy contained within itself the secret of diagnosis, for many of them taught plainly that the patient was to be examined at all points, yet the fantasy and mysticism, and the factitious physiology which too often marked their writings on the subject, encouraged the extravagant pretentions of the uroscopists of later centuries. From such extravagance John was free: he had absorbed not only the dogmas of Hippocrates and Galen, but their spirit also. He was a highly educated man and a shrewd observer, of sound judgment. Neuburger goes as far as to call him a forerunner (*Vorbote*) of the Renaissance. He regarded the urine rightly as an excretion from which much, but by no means all, information could be obtained. In this rapid survey, however, I can go no farther than to indicate his eminent services to psychology, and the therapeutics of mental disorders. As a student he had been well trained in philosophy, and in later life brought to this study the practical knowledge and experience of the physician. Thus, he was able to point out the dependence of mental symptoms upon bodily causes, upon errors of diet, impurities of the blood, intemperance, and so forth: and upon this sound basis he prescribed a system of rational cure by diet, baths, exercises, which he wisely said would influence for good, not only the physical and vital pneuma, but also the *pneuma psychicum*.

In this period the encyclopædic methods of which I have spoken were laboured more and more, and the world was burdened or enriched by such collections as those of Isidore[1] of the seventh century, Photius of the ninth, and Psellus of the eleventh, most of which included some medicine: but the Myriobiblion of Photius consisted almost entirely of portions of some three hundred classical books, some of which, such as Arrian and Diodorus Siculus, would otherwise have been lost. In Isidore the medical section is compiled mainly from Caelius Aurelianus (Soranus): but, valuable as are the nuggets of tradition which may be picked up here and there, we must not look to these diligent compilers for much more than curiosities. I ought to add, however, that Photius and Psellus were no inconsiderable humanists, as was likewise Alexander of Tralles. From this point of view their somewhat tedious pages may be glanced over not without profit. Psellus, on the other hand, put his trust in the Hermetic books, in alchemy, in gems, &c. One of the treatises of Psellus is entitled *περὶ ἐνεργέιας δαιμόνων*: it is not exactly a manual of the demonistic pathology of which I have spoken already, but a description of the guises in which unclean spirits may lurk: it shows a considerable familiarity with the natural history of these creatures—lucifera, "aquea" et subterranea—and of their abominable rites and functions. The doctors who vulgarly attribute their malign work to a vitiation of the bodily humours are suitably reproved.

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[1] A very convenient edition of Isidore's "Etymologiae," in two small volumes, has recently been published by the Oxford Press, but, strange to say, without a date.

I ought not, however, to omit some notice of the surgical collection of *Niketas* at the end of the eleventh century, a valuable record of ancient surgery on which I have made some interesting notes which time forbids me to read. In the Florence manuscript there are some coloured illustrations, and Schone, in his edition of Apollonius of Kittium, finds some evidence that certain of these later illustrations may have come down to us from those of the original authors.

I have spoken of demonism and of magic as sapping the pathology and therapeutics of the Byzantine and Middle Ages: another baneful practice also prevailed, a phase of superstition which, even within the memory of some of those present, was not obsolete. When I began practice it was customary at every consultation to prepare a writing table, pens, and ink for "the prescription." This script, even in my young days, was of formidable composition, a drug for every symptom, and a few more for the pool; it was solemnly set forth, and signed by both physicians; and by the patient's friends it was understood, if but long enough, to be the whole organ of his restoration. No room was left for modification according to circumstances or the various phases of the disorder; to it the doctor in attendance was as submissive as the patient to whom it was scrupulously administered in all its phases—potion, pill, and plaster. To it, indeed, all else was subordinate. If it failed, well the consultant and home doctor together had not hit off the complete formula. Now Hippocratic therapeutics had been rational, and based wholesomely upon the springs of man's nature: on means such as diet, exercises, baths, and climate: and Erasistratus protested against much drugging, numerous recipes, and so forth; but in Byzantine times these rational methods were superseded by a belief in the quasi-magical virtues of a medley of drugs, and by modes of practice which, on the one hand, touched upon the gruesome art and mystery of poisons and antidotes, which had flourished from the third century B.C. onwards, a tradition which by rights should find a place in this lecture, and, on the other, was derived from the semi-magical closet of the republican paterfamilias, wherein, among their Penates, patricians of the race of Cato kept their panaceas. Perhaps formally this recipe medicine may be dated from *Scribonius Largus*, whose work on the Composition of Medicines—*thesaurus verius quam liber*, as an old editor says of it[1]—written in the reign of Claudius and, Roman as he was, in barbarous Latin, owed much, as he honestly says, to Greek physicians mostly unknown: in part no doubt, to the Alexipharmaka and Theriaka of Nicander in the second century B.C., and in its turn it became a widow's cruse for the writers of many a following century. We may believe him when he says that he composed the majority of his receipts himself.[2] The great Greek botanist and physician *Dioscorides*, of Cilicia, in the second century A.D., stood head and shoulders above these pharmacopolists, but, ascendant as he was, he failed to stem the flood of recipe books which for many a century never dried up: and Nicander had begun, or at anyrate he perpetuated, the futile method of attaching the recipes to their respective symptoms or diseases. It is fair, however, to add that in Scribonius there is some substantial surgery: and, according to Haeser, he was the first to make a pure preparation of opium. It would be endless and not very profitable to pursue the muddy stream of polypharmacy from Scribonius to later doctors, greek and neo-latin, Placitus, Lucius Apuleius, also a botanist of

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[1] Adding, "Nunc primum tineis et blattis ereptas . . . industria Joannis Ruellii Doctoris disertissimi."

[2] Haller, it seems, scoffs at Scribonius for his old woman's receipts, but these are few and were no doubt popular remedies. On the whole, his prescriptions were sound and intelligent and few superstitious: unless it were stag's horn, hyena skin, or liver of a stabbed gladiator. But some Hippocratic medicine is not free from primitive ingredients. Many of these books were not for doctors, but for domestic use.

Fondeaux, Serenus Samonicus,[1] Theodore Priscian,[2] Marcellus Empiricus of Bordeaux, Paulus Jovius, Plinius Valerianus, and so forth, down to the Antidotarium of Nicholas, the Praepositus of Salerno, the Dynameron of the Alexandrian Nicholas (Myrepsus or Unguentarius) of the thirteenth century, and to many another volume of formulas, Greek, Latin, and Arabian.[3] The word "apothecary" by the way in those times did not necessarily mean druggist: there were stores and storekeepers of other kinds, of records and accounts, for example, the druggists were *ῥιζοτόμοι* and *φαρμακοπῶλοι*, or even *φαρμακόι*, *i.e.*, poisoners or sorcerers.

We have dwelt upon gloomy and decadent times, upon night and the chimeras of the night. Before concluding my lecture let us turn our eyes, if but for a moment, towards the coming light, some tender radiance of dawn. In the third and fourth centuries the evening was falling, fading with soft harmonies. The sweet influence of Virgil, the Roman love of Nature, the haze of mystic beliefs, the new contemplations wafting from east and west—not robust, it is true, but sentimental and pathetic, and at their best almost Wordsworthian in their spiritual joy in Nature—were setting. Yet this love of Nature had been not only for her gentle and picturesque moods, but also for the solemnity and glory of the mountain forms which we flatter ourselves that we were the first to adore, but which we may find adored before us by Augustin and Paulinus of Nola, and after them by Cassiodorus, whose passionate love for Como, its lake and its mountains with their beauty of form and colour, is far away from the vapid and imitative productions of the "Dark Ages," which prevailed before the Nature poetry returned again in the mediaeval romance writers, in the monasteries, and so down to Chaucer. This was the dawn, the silver or Latin revival, under Bede, Alfred, Charles the Great, and Alcwin—sometime a boy, afterwards headmaster, of my own school of St. Peter. And at this time grew the medieval Latin, that adaptable, expressive, and universal language with which we are familiar in medical works of the period. It may be that in this period of dawn science also showed some awakening, but it is not very apparent. Some readers see it in the "Physica" of the *Abbess Hildegard* of Bingen in the eleventh century (1099–1179). Her book I have read, and I admit its system, its clearness and concision, and its learning[1]: there is, moreover, some fair medicine in it, especially concerning healing waters: but it is conceived throughout on formal and stereotyped lines, each herb or metal being characterised punctiliously by its humoral qualities, without any freshness of personal observation. Hildegard was no doubt a learned and interesting woman, but cannot be regarded as the harbinger of a medical renaissance.

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[1] A wearisome versifier of medicine, but a man of some attainments, and one of the few Latin physicians.

[2] See Schonack's Scribonius and the edition of Priscian by Meyer, to which I would express my debt.

[3] The doctors of the eighth to the thirteenth century were nearly all laymen. Salerno was no independent or sudden phenomenon.

We might, indeed, have expected more of Hildegard, seeing that the Arabian tide, a wondrous reawakening of science and medicine, was then on the flow. I have called it Arabian according to reasonable custom; but we must not forget that in its springs it was Syrian rather. I have said that after Constantine the greater physicians were for the most part Christian, and that the Nestorians on their expulsion, carried with them eastwards many manuscripts, a scholastic tradition, and much individual skill and experience. Already, under the Seleucids, *Syria* had become more Greek than is usually realised, especially in cities such as Antioch and, until the earthquake under Justinian, at Beyrut. There were academic schools in Mesopotamia at Nisibis and Edessa also; and onwards Nestorius and his disciples, when ejected from Edessa, carried their learning and fame to Gondisapor in Persia, they were honourably received under the tolerant Sassanian rule. In Rome, as in France during the religious wars, and as, indeed, in ancient Greece, the banishment of its ablest men enfeebled the State. At Gondisapor, from the end of the fifth century, if not earlier, there was a medical school with a hospital attached to it; and for many generations this Studium survived the inroads of Islam, and was the chief seat of learning in the East. Thus Syria became a land of men of science and of doctors, many of them Christian; in the sixth century Christian Syrians were translating Aristotle and other Greek manuscripts into Syriac and Arabic; so fulfilling in that generation the function which in the next phase of the revival was performed by such translators, from these languages into latin, as Gerard of Cremona, and Constantine of Carthage. Honein (Johannitius) translated Galen and other greek writings into arabic. But it was not till the twelfth century or thereabouts that Arab influence made itself felt in Salerno, a school originally independent of oriental tradition. But to come into sight of the Arab schools is to reach the limits of our conference.

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[1] Outside my subject the descriptions of the plants and minerals used as remedies have interesting points, and there is some more or less original folklore. The German synonyms for natural objects also are of interest. The *De rerum naturis* of Alexander Neckam, and the *Speculum Majus* of Vincent of Beauvais, afterwards superseded by translations of Pliny, were written a century later. Neckam is the best reading; he writes in good latin, spiced with many anecdotes and lively details.

I must touch, at least in passing, if I cannot enter into the Military Medicine of the Middle Ages, a sphere of work most interesting to us in the biographies of many great men of our art, from the Thessalian dukes Podalirius and Machaon onwards to Paré and Harvey, who in military service found a fruitful experience: perhaps, indeed, the nursery of their genius. But, as we have now an adequate study of it by Haberling,[1] I feel the less called upon to describe it. I may remark, however, that recent excavations, for instance at Carumtum, near Vienna,[2] have revealed to us that military hospitals were more complete and permanent institutions than we had supposed. With the formation of a standing army under Augustus they were greatly developed: and although with the growth of Christianity the hospital, and what is more important, the charitable spirit, grew abundantly, yet we cannot accept the common and still prevalent tribute that the hospital owes its birth to Christianity. To hospitals as charities there were many gradations: from Asclepian temples, surgeon's apartments where patients were received—*ἴατρεια*, officinæ medicinæ[3]—valetudinaria for slaves, hospitals for special diseases such as leprosy, and many other medical institutions often attended by several doctors, and some of them having a public status. Under the Flavian emperors, when Christianity was young, such institutions, planned on the corridor system and governed by strict rules of cleanliness, purification, nursing, and good cookery, were already highly developed. And before Christ we read of hospitals in provinces, especially the Greek provinces, under public control, with doctors officially appointed to them (see Galen, XVIII (b), S. 678).

Edessa was provided with two large hospitals, with medical schools attached: and not only in Toledo and Cordova, but also long before in Bagdad and Cairo and other non-Christian countries, great hospitals and medical schools were established by the Saracens. In Christian Byzantium a large hospital, then no new institution, was opened by Justinian and Theodora near St. Sophia: and the Hospital of the Four Martyrs was founded by Isaac Angelus, not to reckon innumerable lazar houses, foundling homes, and so forth.

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[1] Haberling, W., *Militärlazarette im alten Rom.*, Berlin, 1909, contains plans, &c.; also *Die altrömischen Militärärzte*, H. 42, *d. Veröffentl. aus d. Gebiete d. Sanitätswesens*, Berlin, 1910.

[2] See Haberling, *loc. cit.*

[3] See the early *locus classicus*, Plautus, Menaech. v, 5.

Basil's well-known hospital at Caesarea was not the first even in this city. In earlier times Anna Comnena was an ardent doctor, and so was the Emperor Manuel, who himself practised with potions and salves. In the West, out of the hospices for the reception of strangers, hospitals sprang up on the great roads—about the monasteries therefore, and near the bridges: thus the full title of the chief hospital of Lyons is the Hôtel Dieu du Pont du Rhone.

But I must stop, although, so abundant is the matter, there is no reason but your weariness why I should not prose on for another hour, or many an hour. My excuse, which I am sure you will accept, for my cause if not for myself, is that, in the words of a far greater historian, the history of knowledge is knowledge itself.

Postscript.—For the materials of this lecture I am indebted to many sources. I had by me an old collection of notes and memoranda, derived partly from reading of the authors discussed, partly from secondary sources, but needing revision in view of recent research. For early medical history, Haeser is, in my experience, still the backbone of study: but since his date much new work has to be brought in, and particular epochs have been investigated with a fulness not consistent with the limits of Haeser's treatise. We are under like obligations to Puschmann's History.

Many useful references and valuable material and criticism I owe to Harnack's *Medicinisches aus der ältesten Kirchengeschichte*, 1892, and I am obliged also for some details and references to Dr. Franz Strunz's tract on *Gesch. d. Naturwissenschaften im Mittelalter*, and should have been still more obliged to him had he provided it with an index.

Of special treatises the chief on the present subject is Puschmann's excellent edition of Alexander of Tralles, with a full introduction and text, and with (what I confess is not unwelcome to me) a translation on the opposite pages. From Neuburger's History I ought to have gleaned more than I have done. It has been on my shelves from its publication, but much of my reading on the subject had then been done, and I have not had time since to do more than consult it occasionally on matters of obscurity or dispute: but this with great advantage. To Schonack's Scribonius, Meyer's Priscian, and a few other special essays, I have made reference in the text. The debt of all historians of medicine to Diels and his disciples, especially to Wellmann, is too deep for formal reckoning, and, like that to Greenhill, Adams, and Daremberg, perennial. I may add that I find Darmstaedter's *Handbuch z. Gesch. d. Naturwissenschaften*, 1908, to be a useful companion on the historian's writing table.

CURRENT TOPICS.

University of Glasgow: Graduation in Medicine and in Science (Public Health).—The following is the list of degrees in Medicine and in Science (Public Health) conferred at recent graduations in Glasgow:—

On 9th October, 1913—

A. BACHELORS OF MEDICINE AND BACHELORS OF SURGERY (M.B., Ch.B.)

I. With Honours.

Douglas Kinchin Adams, M.A., B.Sc.

II. With Commendation.

William John Henry.
Wallace MacCallum Conley, M.A.
Thomas Murray Newton.
John MacInnes.

III. Ordinary Degrees.

Nora Maud Aden Allan.
Emile Augustine Cameron Beard.
Simon Harry Bennett.
William Adam Brechin.
David Peebles Brown.
Margaret Jarvey Brown.
Benjamin Cohen.
Nathaniel Crichlow.
Lawrence Crombie.
Daniel Augustine Cush.
Gabriel Daniel de Kock.
Joseph Dunbar.
William Campbell Fleischmann.
William Forsyth.
William Fotheringham.
Ian Dingwall Grant.
John Galloway Hendry.
George Hislop.

III. Ordinary Degrees *(continued)*

Mary Pringle Hislop.
William Hornsby.
Alexander Lindsay.
Douglas M'Alpine.
James Learmont M'Bean.
John Aloysius M'Connochie, L.A.H. (Dub.).
James Walter M'Donald.
Annie Rankine M'Kail.
Donald Mackinnon.
James Robertson Cowper Mackintosh.
Robert M'Lean.
Andrew Paton Martin.
Osborne Henry Mavor.
Archibald Underwood Millar, M.A.
Michael Murphy.
Archibald Naismith.
James Purdie.
Angus M'Innes Ramsay.
David Smith.
William Robertson Snodgrass, M.A., B.Sc.
William Rowland Taylor.
Carel Johannes van Lingen.
Robert Bruce Wallace.
Matthew White, M.A.

B. BACHELOR OF SCIENCE IN PUBLIC HEALTH (B.Sc. Pub. Health).

Tehl Singh, M.B., Ch.B.(Edin.)

Note.—Mr. John S. K. Boyd, who graduated on 21st April, 1913, gains the Brunton Memorial Prize of Ten Pounds, awarded to the most distinguished Graduate in Medicine of the year.

On 30th October, 1913—

BACHELOR OF MEDICINE AND BACHELOR OF SURGERY (M.B., Ch.B.)

Philip Figdor.

On 15th November, 1913—

DOCTORS OF MEDICINE (M.D.)

I. With Honours.

John Cruickshank, M.B., Ch.B. (1908)—Thesis, "The chemistry and biochemistry of lecithin and other lipoids."

Adam Patrick, M.A., M.B., Ch.B. (1908)—Thesis, "The agglutination reactions of typhoid bacilli isolated from the body: with a discussion of typhoid bacilluria, and an account of certain bacilli, hitherto undescribed, found in the urine in enteric fever."

Hugh Ferguson Watson, M.B., Ch.B. (1911)—Thesis, "*Part I.* An investigation on the *rôle* of syphilis in the causation of children's diseases, based on an examination of 1,010 cases by clinical and serological methods. *Part II.* Paroxysmal hæmoglobinuria in the light of the Wassermann reaction, with some experiments on the properties of the autohæmolysin present in the serum. *Part III.* Observations on the activating effect of the blood serum for cobra venom hæmolysin in various diseases."

II. With High Commendation.

Kate Fraser, B.Sc., M.B., Ch.B. (1903)—Thesis, "Feeble minded children: an inquiry into mental deficiency in school children, with special reference to syphilis as a causative factor as determined by the Wassermann reaction."

Balfour M'Kean, M.B., C.M. (1910)—Thesis, "An investigation into the clinical value of the enumeration of the nuclei in the neutrophile polymorphonuclear leucocytes of the blood."

III. WITH COMMENDATION.

John Parlane Kinloch, M.B., Ch.B. (1909)—Thesis, "The excretion of urinary solids: a chemical study of urine in the nephritis of scarlet fever and diphtheria."

Daniel M'Kinlay Reid, M.B., Ch.B. (1907)—Thesis, "On the bacteriology of asylum dysentery in England."

Gilbert Innes Strachan, M.B., Ch.B. (1910)—Thesis, "Observations on eclampsia."

IV. ORDINARY DEGREE.

Archibald Craig Amy, M.B., Ch.B. (1904)—Thesis, "A clinical study of a pyrexia of uncertain origin."

Thomas Archibald, M.B., Ch.B. (1908)—Thesis, "On the value of autogenous vaccine therapy in otitis following scarlatina, with notes on the vaccine treatment of other scarlatinal sequelæ."

William Barr, B.Sc., M.B., Ch.B. (1908)—Thesis, "The influence of ocean spindrift and blown spray on the chlorine content of inland ground waters."

David Blackley, M.B., Ch.B. (1904)—Thesis, "Observations on some complications in obstetric practice, with special reference to the use of pituitary extract."

James Alexander Cowie, B.A., B.Sc., M.B., Ch.B. (1904)—Thesis, "The effect of civilization on the Maori race, with special reference to health and disease."

John Drummond, M.B., C.M. (1894)—Thesis, "Remarks on the treatment of gonococcus infections in the male."

John James Edgar, M.B., C.M. (1899)—Thesis, "Retrodeviations of the uterus, with special reference to sterility."

Robert Stewart Miller, M.B., Ch.B. (1911)—Thesis, "Contributions to the psycho-pathology of everyday life: their relation to abnormal mental phenomena."

Spencer Mort, M.B., Ch.B. (1903)—Thesis, "On resistance to peritoneal bacterial infections: an experimental study, with special reference to agglutination."

William Aikman Muir, M.B., Ch.B. (1908)—Thesis, "A recent epidemic of typhus fever, with notes on the urinary condition."

William Murray, M.B., C.M. (1891)—Thesis, "Pseudo-meningitis, with special reference to meningism."

James King Patrick, B.Sc., M.B., Ch.B. (1901)—Thesis, "The prophylaxis of tuberculosis, and some observations on the treatment of phthisis pulmonalis by means of tuberculin, with illustrative cases."

Ethel Jane Mildred Price, M.B., Ch.B. (1905)—Thesis, "Notes on bubonic plague in India."

Campbell Ross, M.B., Ch.B. (1905)—Thesis, "Pulmonary tuberculosis in the Royal Navy, with special reference to its detection and prevention."

James M'Alpine Scott, M.A., M.B., Ch.B. (1910)—Thesis, "Peptic activity of gastric contents and urine in some gastric disorders."

Hugh Cochrane Storrie, M.B., Ch.B. (1908)—Thesis, "Hæmorrhagic and gangrenous varicella, with notes of two cases."

APPOINTMENTS.—The following appointments have recently been made:—

J. H. Macdonald, M.B., Ch.B.Glasg. (1899), to be Superintendent, Hawkhead Asylum, *vice* Dr. W. R. Watson, retired.

W. F. Quaife, M.B., C.M.Glasg. (1883), to be Government Medical Officer at Braidwood, N.S.W.

R. G. Bell, M.D.Glasg. (M.B., 1890), F.R.C.S.Ed., to be Certifying Factory Surgeon for the Sunderland District, Co. Durham.

Western Infirmary: C. C. Cuthbert, M.A., M.D.Glasg. (M.B., 1900), from Dispensary Surgeon to be Assistant Surgeon; Roy F. Young, M.B., B.C.Camb., and W. A. Campbell, M.B., Ch.B.Glasg. (1906), F.R.C.S.Eng., from Extra Dispensary Surgeons to be Dispensary Surgeons; Charles Bennet, M.B., Ch.B.Glasg. (1908), to be Extra Dispensary Surgeon; J. W. M'Nee, M.B., Ch.B.Glasg. (1909), and Adam Patrick, M.A., M.B., Ch.B.Glasg. (1908), to be Extra Dispensary Physicians.

ERRATUM.—We regret that in the list of office-bearers of the Partick and District Medical Society, which we published in the November Issue, p. 365, the name of Dr. J. Morton appeared in the list of Council as Martin.

PROFESSOR BOWER ON UNIVERSITY DEVELOPMENT.—At the annual dinner of the Glasgow Juridical Society, held on the evening of 31st October in the Windsor Hotel, Professor Bower responded to the toast of the University of Glasgow. After expressing regret that Principal Sir Donald MacAlister was, through illness, unable to be present, Professor Bower went on to speak of the developments which had taken place in the University since he came to it twenty-eight years ago. He was struck, when he came, by the fact that there was hardly one among the students who did not know what he wanted, and was determined to get it. That was a feature which was so frequently lacking in the universities of the south. In the University Calendar of 1885 the total number of the teaching staff was 55 names. Now there were between 165 and 170. The number of students remained the same within a hundred or two. The trebling of the staff meant that every student on the average would get three times the personal attention he did in 1885. A school had as its function the dissemination of knowledge; a university had as its function the dissemination of knowledge and the acquisition of new knowledge—the making of knowledge. What he would very much desire was that in the government of the University there should always be allowed to the members of the junior staff some latitude and some time which they could devote to their own investigations, and so not only qualify themselves for getting higher positions elsewhere, but also bring that nascent touch to the student mind and quicken it to the aspiration.

RECENT CHANGES IN THE SENIOR RANKS AT THE HOSPITALS. —Our readers cannot but have been struck with the number of changes which have taken place in the senior ranks of the hospitals during the past six months. At the Western Infirmary Professor Gemmell's very sudden death was quickly followed by the retiral of Sir George Beatson under the age limit. At the Royal Infirmary both Dr. G. S. Middleton and Dr. John Barlow, having reached the age limit, have retired. Sir George Beatson has been appointed an Honorary Consulting Surgeon to the Western Infirmary, and a similar distinction has been conferred by the Directors of the Royal Infirmary on Drs. Middleton and Barlow, who are now respectively Honorary Consulting Physician and Honorary Consulting Surgeon.

The payment of such compliments by the governing bodies of our hospitals to those who have for so long performed the strenuous and unremitting duties of visiting physicians and surgeons is a gracious acknowledgment of their past services to these institutions. Such acknowledgment is well-merited, and, while gratifying to the recipients, it is also fully appreciated by their professional brethren.

COMPLIMENTARY DINNER TO DR. G. S. MIDDLETON.—On the evening of Friday, 31st October, at the St. Enoch Station Hotel, Dr. George S. Middleton was entertained to dinner by his former assistants and house physicians at the Glasgow Royal Infirmary.

Twenty-six men met to honour their old chief, and the toast of the evening was proposed by the Chairman, Dr. P. C. MacRobert, of Innerleithen, who had been the first of Dr. Middleton's residents. The guest was then presented with a gold loving-cup. His reply was reminiscent, humorous, and happy.

Songs were contributed by various of the company, and during the course of the evening messages were received from old residents now in London and in Shanghai. The toast of "absent friends," proposed by Dr. Geo. M'Intyre, whose reference to the "Thin Red Line of Middletonians encircling the Earth" was greatly applauded, concluded a most pleasant and cordial meeting.

PROFESSOR NOËL PATON'S RECENT VOLUME.—We are asked by the publishers of Professor Noël Paton's recent volume,[1] a review of which appeared in our issue for October (1913), p. 306, to state that the author passed the final proofs of the work early in June. This fact is of interest as it makes it clear that, while the discussion on the ductless glands, at the International Medical Congress, bore closely on the subject, Professor Paton's work was quite independent of the discussion.

MATERNITY HOSPITAL BAZAAR.—A large and, we are glad to note, successful bazaar was held early in November on behalf of the funds of the Glasgow Maternity and Women's Hospital. Like most other medical charities the Maternity Hospital has always felt the lack of funds; but, unlike some of its more fortunate sister-institutions, it has been much crippled in its work. As an instance of this we may mention that the directors of the hospital have been unable to carry on the gynæcological department of the hospital, and repeated appeals have from time to time been made on its behalf to the charity of the Glasgow public. These appeals culminated in the great bazaar, which achieved a success both brilliant and substantial, the drawings amounting to £17,000. But the bazaar "yielded," to quote the daily press, "three notable by-products." First of all there was Messrs. Archibald and James Walker's gift of £2,500 in memory of their mother. Then came the provision, by Mr. A. F. Yarrow, of Campsie Dene, of a convalescent home on the Gareloch. And, lastly, on the closing day of the bazaar, Professor Munro Kerr intimated the promise of £3,000 from an anonymous donor. This last gift was made for the purpose of developing clinical and pathological research in the hospital, and it will, we hope, serve the very useful purpose of directing public attention to the fact that adequate training for medical men is necessary if the community is to derive the greatest possible benefit from the hospital.

The directors of the hospitul are to be congratulated on the success of the bazaar, and their thanks, and through them that of the community, are due to the large band of unselfish workers through whose efforts the result has been obtained.

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[1] *The Nervous and Chemical Regulators of Metabolism (Lectures).* London: Macmillan & Co., Limited, 1913.

ROYAL ARMY MEDICAL COLLEGE PRIZE-GIVING.—In our issue for September, p. 201, we noted the success of Mr. H. C. D. Rankin, M.B.Glasg., at the August examination of candidates for commissions in the R.A.M.C.

At the distribution of prizes at the Royal Army Medical College, which took place on 29th October, Mr. Rankin's name figured prominently in the honours list. He was *proxime acessit* for the Herbert Prize for the highest total of marks, having gained 536/700 marks (29 below the prize-winner). He gained the Marshall Webb Prize in Administration, with 97/100 marks, and the Second Montefiore Prize in Surgery, with 75/100, and he was *proxime acessit* for the De Chaumont Prize in Hygiene, with 142/200 marks (2 marks below the prize-winner).

We congratulate Mr. Rankin on having made so good a record at the outset of his career in the Service.

CHADWICK PUBLIC LECTURES IN GLASGOW.—In the commencement of October, Mr. W. E. Riley, F.R.I.B.A., Superintending Architect to the London County Council, delivered the Chadwick Lectures on "Practical Problems of Housing Reform." The first and third lectures were delivered in the University, the second in the City Chambers.

The lecturer dealt with unhealthy areas, and referred to the housing operations carried out by the London County Council, by which accommodation had been provided for 55,577 persons, as against 45,562 displaced. On financial grounds it was practically impossible to provide housing accommodation in the central districts at rents appreciably lower than the rents ruling in the neighbourhood, unless further charges are placed on the rates. The remedy appears to be cheap and rapid transit to suburban areas.

The lecturer outlined a scheme under the Housing Act, 1890, Pt. I, for the demolition of the old houses, and the provision, on the area or in its vicinity, of accommodation in suitable dwellings for the displaced persons. He also dealt with municipal housing accommodation in London, provided voluntarily, and not in order to comply with statutory obligations. Estates have been purchased on the outskirts of the county, where land has a low value and cheap and rapid travelling facilities exist, and there cottages have been erected. He showed how a workman by living in a suburban district could secure air space and pleasant surroundings at practically no extra cost for rent, or even, in the majority of cases, with some reduction in expense, and referred to the

Town Planning Act as a distinct step in the direction of a solution of the problem, as well as an attempt to check the unordered growth of cities.

RESEARCH DEFENCE SOCIETY. — The Research Defence Society, which was founded in January, 1908, has for its object the making generally known the facts as to experiments on animals in this country, and the regulations under which they are conducted; the immense importance of such experiments to the welfare of mankind; and the great saving of human and animal life and health which is already due to them.

It is very important that the ignorance of a large section of the public regarding the facts as to experiments on animals be dispelled, and we are glad to be able to announce that a public meeting of the Glasgow Branch of the Society will be held in the Mid Hall, St. Andrew's Halls, on the evening of Friday, 19th December, at 8 o'clock.

The chair will be taken by the Right Hon. Lord Lamington, G.C.M.G., G.C.I.E., and addresses will be delivered by Professor Sims Woodhead, Rev. Hubert Simpson, and others. A limited number of reserved seats, for which no charge will be made, are available upon application to the Hon. Secretary, Dr. Charles Walker, 7 Dundonald Road, Kelvinside.

EUGENIC REFORM: ADDRESS IN GLASGOW BY MAJOR L. DARWIN.—Major Leonard Darwin delivered an address in the Hall of the Royal Faculty of Physicians and Surgeons on 30th October, the subject being "The Need for Eugenic Reform." After referring to the fact that the practically universal acknowledgment amongst thinking men during the last fifty or sixty years of the principle of evolution must be described as a complete revolution of thought, the lecturer proceeded to suggest that the adoption of the belief in evolution must tend to produce material alterations in the way in which we regard many practical questions. Revolution in thought was inevitably accompanied by more or less considerable changes in policy and social customs. We could not go on acting as if we held precisely the same beliefs as our ancestors, and the aim of the eugenist was both to guide and to hasten the reforms in social customs and in legislation, reforms which must result from the acceptance of the doctrine of evolution. Thinking men must feel profoundly dissatisfied with the existing social condition of their country. We were bound to see if something could not be accomplished for the human being before his birth. The eugenists held that the world was so constituted that all the good and useful inborn qualities of man, as well as all his evil tendencies, had been evolved in accordance with what were called the laws of nature. They hoped and believed that, by studying these laws and utilising the discoveries made by such study, they should be able to take steps tending to ensure that the man of the future should be a far nobler being than the man of to-day. While not as yet able to formulate a precise policy, eugenists saw clearly that the selection of the ancestry of the coming generations had been one of nature's main methods of ensuring racial advancement. It was essential to adopt reforms based on heredity; but eugenists should also take part in the campaign against drink and disease, and the same was true with regard to environmental reforms, such as better housing and sanitation. The factor of heredity, however, was the key by means of which the door leading to the future advancement of mankind could be unlocked. Sterilisation was a very difficult question; but Segregation was within the region of practical politics since the passing of the English Mental Deficiency Bill. While attention should be directed to the feeble-minded, other classes of degenerates, notably criminals and paupers, should have their rate of multiplication diminished.

Major Darwin's address was listened to with interest by a large company.

FABIAN SOCIETY AND INDUSTRIAL INSURANCE.—The Fabian Research Department, in compliance with numerous requests, has started a detailed investigation of the various forms of Industrial Insurance, beginning with the working of the National Health Insurance Act. The investigation will have for its sole purpose to discover what actually is the effect of the Act, and in what way its operation can be improved. With this in view, a Committee of Enquiry has been formed, and they invite insured persons, doctors, nurses, members of insurance committees, workers in any way connected with friendly societies—such as sick visitors, agents, secretaries, branch secretaries, &c.—to contribute facts or other information which they think would be of service.

The committee will be very pleased to receive copies of the minutes and regulations of insurance committees; particulars of societies' admission or refusal; expulsion or transfer of members, or refusal of permission to transfer; adequacy or inadequacy of medical treatment; success and failure of the sanatorium benefit; medical attendance available for persons leaving home, or away from home; the working of the maternity benefit, and so on.

Information on the above will be thankfully received by the Hon. Secretary, Mr. H. J. Gillespie, 37 Norfolk Street, Strand, London, W.C.

THE MANGEL-WURZEL AND DR. LETTSOM.—A recent speech by one of our Cabinet Ministers has given to the mangel-wurzel a journalistic notoriety that it had not hitherto enjoyed. But whether the pheasant is merely a usufructuary, or actually destructive of or beneficial to this radical crop, does not at present concern us. What we are interested in is our indebtedness to a distinguished member of the medical profession for having any such cow-feeding root to wrangle about to-day.

In 1786 Sir Richard Jebb obtained a quantity of the seed of a dietetic vegetable known in France by the name of *racine de disette*. Some of these seeds were presented to the Society for the encouragement of Arts, &c., and by the direction of the committee transmitted to a few of the members for experiment. Among this number was Dr. Lettsom,[1] who appears to have been the only successful horticulturist, and who, being given to think philanthropically, was at once enormously impressed by the possibilities of the mangel-wurzel, since he calculated that a square yard of ground could be made to yield no less than 50 lbs. of salutary food for the people. An account of the culture and use of this "root of scarcity" by l'Abbé de Commerell falling into Dr. Lettsom's hands, was translated by him in 1787, and passed through four editions in the course of eight months. The doctor imported a considerable quantity of the seed into this country, and much of it he gave away to those interested in and acquainted with agricultural pursuits, while the remainder was sold for the benefit of the Royal Humane Society and the Society for the Relief and Discharge of Persons confined for Small Debts. In spite of opposition, ridicule, and satire, Dr. Lettsom persevered in his advocacy of the mangel-wurzel, never missed an opportunity of placing a few seeds with anyone likely to use them, and before his death had the satisfaction of seeing the cultivation of this plant well established. And though his hopes that it would be added to our list of culinary vegetables has not been realised, it has attained an unassailable position in the feeding and fattening of stock.

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[1] *Cf. Memoirs of the Life and Writings of the late John Coakley Lettsom, M.D., LL.D., F.R.S., F.A.S., F.L.S., &c., with a Selection from his Correspondence*, by Thomas Joseph Pettigrew, F.L.S., 1817.

J. C. Lettsom was born at Little Vandyke, one of the West Indies, in 1744, and when 6 years old was dispatched to this country. He went to school at Lancaster, and later attended a seminary at Liverpool. He served an apprenticeship of five years with Abraham Sutcliff, a surgeon and apothecary at Settle, in Yorkshire; after which he entered for twelve months as a dresser under Benjamin Cowell at St. Thomas', and also walked the wards in the wake of Akenside, Russell, and Grieve. A voyage to the West Indies was remarkable for the circumstance that young Lettsom, on visiting his estates, emancipated all his slaves and voluntarily became a beggar. In this case, however, virtue was not allowed to be its own reward, for five months' practice at Tortola placed to his credit the sum of nearly £2,000, which enabled him, after discharging certain family obligations, to set about the supplementing of his own somewhat scrappy medical education. Once more back in England, he proceeded almost immediately to Edinburgh, where he attended Dr. Cullen's clinical lectures and his lectures on the institutes of medicine, and also Dr. F. Home's class on materia medica: thereafter he visited Paris, Spa, Aix-la-Chapelle, and other resorts of learned doctors. He took his degree of Doctor of Medicine at the University of Leyden in 1769. Returning to London, and becoming a Licentiate of the Royal College of Physicians, he commenced practice in 1770 under the protection of Dr. Fothergill, one of the most celebrated physicians in Europe, and, like Lettsom himself, a Quaker; married a lady with an enormous fortune; and very quickly became the first physician in the city of London. He died in 1815.

Dr. Lettsom was a man of indomitable energy and boundless interests. On medical matters he wrote voluminously, while, stout-hearted propagandist that he was, his pen and voice were for ever at the service of any cause that made for social improvement and progress. His purse, though deep, was bottomed before he died, as the result of his lavish hospitality and ungrudging charities. And always was he ready to help in every possible way those who were least able to help themselves, and who are generally designated the undeserving.

He was an honorary member and fellow of more learned bodies, both at home and abroad, than we care to count. And just as Dr. Johnson had a craze for starting clubs, so had this man a passion for founding societies—the Medical Society of London, the Royal Humane Society, and the Royal Jennerian Society for the Extermination of the Small Pox being but a few of those he was instrumental in establishing. He also set agoing a Dispensary for the relief of the sick and necessitous poor of the community in London, and the General Sea Bathing Infirmary at Margate, and did an enormous amount of good through his agitation for the betterment of gaols.

Possessed of considerable culture, he associated with the erudite, patronised arts and letters, and was himself occasionally visited to some purpose by the muse. Moreover, he had the supreme honour of being enshrined in verse during his lifetime. Thus some unknown bard in a moment of exuberance dashed off the following:—

When any sick to me apply,
  I physicks, bleeds, and sweats 'em ;
If after that they choose to die,
  What's that to me,
    I LETTSOM.

And his mangel-wurzel friend, the bucolic Sir Mordaunt Martin, recollecting that "to let" meant, in ancient times, "to hinder," succeeded to perfection in warping the above *jeu d' esprit* into the prosiest of prosy compliments, which we refrain from quoting. Then there was James Boswell, the same that "took on with Paoli" and later with "ane that kepped a schule and ca'd it an academy," who, in a poetical epistle to Mr. Charles Dilly, devoted nine verses (conceived in the happy assurance of friendly intimacy and mutual regard) to the depiction of the doctor's many-sided character. We give but the one which takes cognisance of "the vegetable of the moment":—

In Fossils he is deep, we see,
  Nor knows Beasts, Fishes, Birds ill ;
With Plants not few, some from Pelew,
  And wondrous *Mangel Wurzel.*

Dr. Lettsom was an indefatigable correspondent, and the three-volume life by Pettigrew contains many interesting letters from and to the great men of his time. There is one most instructive epistle to his friend and patient, Boswell, wherein the doctor, with a courtesy, felicity, and truth that betoken the most perfect sympathy and understanding between the two men, takes occasion to reprimand the biographer "not merely for a too frequent use of the glass, but for that mixture of liquors which tends to injure the best human fabrick." The halfpenny post card, the sixpenny telegram, and the shorthand typist have amongst them killed letter writing, and even if a busy doctor could nowadays be found to take the trouble to pen such a brief as this to Boswell, we don't suppose that one sick man in a thousand would have the patience to read it. Verbose it may be, but neither love of words nor duty's call has inspired it. It is the spontaneous expression of a kindly-tender solicitude for his dearly beloved by a warm-hearted, sincere, and punctilious man. Here at least was one big enough to appreciate Boswell.

When we contrast the feverish activity of Dr. Lettsom's life, so invaluable to his day and generation, with the little that has endured, we are apt at first to experience a disappointment, and erroneously to reflect that he cannot have been such a very great man after all. Despite his tireless energy in writing books, reading papers, and reporting cases, his name is not to-day associated with anything of importance in medicine or sociology. Nevertheless, such is the normal course of events. Discoveries and reforms are in their very marrow infinite, and in one sense the greater they are the sooner will they cease to be bound up with any names, the more quickly will they themselves be forgotten. That they are superseded and trampled down out of sight and mind in the rush of progress is not because they are bad or wrong, but because they are good and true. Nothing is lost, it is merely transmuted. Even Alexander, as Hamlet pointed out, may eventually serve the useful purpose of stopping a bunghole.

LITERARY INTELLIGENCE.—A fifth edition of Dr. Burney Yeo's *Manual of Medical Treatment* is announced by Messrs. Cassell & Co. The revision has been carried out by Dr. Raymond Crawfurd and Dr. E. Farquhar Buzzard, who collaborated with the author in the fourth edition.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.

SESSION 1912-1913.

MEETING XIII (*continued*).—18TH APRIL, 1913.

The President, DR. A. FREELAND FERGUS, *in the Chair.*

V.—CASE OF TABES DORSALIS.

BY DR. R. BARCLAY NESS.

B. B., a young woman, aged 28 years, was admitted to the Western Infirmary, on Dr. George A. Allan's recommendation, on 26th February, 1913, complaining of numbness and weakness in her legs and difficulty in walking.

History of present illness.—The patient, who is very intelligent, states that three and a half years ago while out walking her left knee suddenly gave way under her and she fell. The joint swelled and she was treated for a month in bed. At the end of this period the knee was practically well, but soon afterwards she found that the left hip-joint seemed to be readily "put out" if any undue strain was put on it. On this account she was admitted to the Western Infirmary, and the joint was x-rayed, but no operation was considered advisable.

She returned to work soon after, and has continued at it since; but the difficulty in walking gradually increased, due to loss of power in the right leg.

For two months previous to her admission to the hospital on this occasion she has complained of other very significant symptoms of a sensory character, viz., a feeling of tightness round her waist as if due to a tight girdle; pains in the front of her thighs and in her joints, often shooting in character; a feeling of numbness and coldness from the waist downwards, lately confined to below the knees and worse in the feet. She has felt, too, as if she were walking always on something very soft. Another of her experiences is that with a loss of feeling in her legs she could not tell where they were lying.

and would put down her hands when in bed to feel where her legs were.

During this same period she has been feeling her legs becoming progressively weaker. Repeatedly she has fallen in the street, due to her "not knowing where her feet were," and often knocking up against objects with her feet without being aware of it until stumbling over them, a clear indication of the impairment of the muscular sense.

This history, so far as it goes, indicates an affection of one or more joints—paræsthesia — and an impairment of the muscle sense, and is enough to suggest a possible case of tabes.

History of previous health and of the family.—So far as we have been able to obtain it this has not been of much help. We have not been able to get any definite history of specific disease either hereditary or acquired.

Present condition.—There are indications, however, that the patient is the subject of specific disease. You can see scars at the angles of the mouth which are the tell-tale of fissures in infancy. Again, examination of the eyes shows that she has an old iritis in both eyes. Both pupils are irregular in shape, and this becomes even more marked when the pupils are dilated with atropine, on account of adhesions between the iris and inner surface of the cornea. This iritis interferes with the Argyll-Robertson test; but, so far as we can judge, there is little reaction to light, while there is a definite enough contraction when the patient accommodates in looking at a near object.

Again, in ophthalmoscopic examination there can be seen evidence in both eyes of optic neuritis with some atrophy, also of choroiditis.

These facts have been confirmed by Dr. Manson, who kindly examined the eyes for me, and they point certainly to the presence of hereditary syphilis. There is no other clinical evidence of this detected; no help, for example, is got from the teeth because they have all been extracted, nor from any marked physiognomy, but the fact is beyond dispute in view of a positive Wassermann reaction being obtained by Dr. Carl Browning.

Now, as regards her complaint—the girdle sensation, the feeling of numbness and coldness, the feeling of not knowing where her legs are, are sensory disturbances not uncommon in tabes.

Her gait is by no means typical of the ataxia of tabes dorsalis. It is more like that seen in a congenital dislocation of the hip-joint, and the examination of the left hip-joint shows the head of the great trochanter to be far above the line joining the anterior superior iliac spine and the tuberosity of the ischium. The skiagram exhibited shows complete disorganisation of the joint. The head of the femur has been quite absorbed, and the articular cavity of the acetabulum obliterated, so that the great trochanter lies close against the acetabulum. This condition of the hip-joint is no doubt of trophic origin and of the nature of those joint affections described by Charcot.

Though the gait is not of the typical ataxic form, yet there is some ataxia present, as seen when you put the patient through some more severe tests. She cannot walk in a straight line placing one foot in front of the other, nor can she stand with her feet together and her eyes shut (Romberg's sign).

Examination of the muscles of the legs shows no definite atrophy, but there is a certain amount of hypotonus present: this is more especially noticeable in the left leg.

At the present time she is not complaining to such an extent as she did before admission of the sensory disturbances enumerated in the history, and on examination she only occasionally makes a mistake with regard to the position of her limbs or toes.

The sensory disturbances are in a great measure subjective, but since admission to the hospital there have been detected indefinite areas of anæsthesia and analgesia in the internal surfaces of the lower parts of the legs, also on the soles of the feet. These areas vary from time to time. Wherever the patient feels the touch of the finger or the prick of the pin she can locate the spot accurately, but often there is apparently some delay in the conduction of the impulse. The sensory defects are most marked at present in the right leg.

The reflexes of the legs.—The knee-jerks and the tendo-Achillis jerks and the plantar reflexes are lost.

The arms.—There are no motor nor sensory disturbances. The reflexes are normal. There is no inco-ordination.

The functions of the bladder, rectum, and uterus are normal.

The circulatory, respiratory, and digestive systems are normal. The urine contains no abnormal constituent.

Remarks.—The above case is interesting because it is an example of tabes dorsalis in a woman. This is not common, but when it does occur, it is usually in one of the lower social grade, and in one who is the subject of specific disease. In this case the syphilitic taint has been inherited, as occurs in juvenile tabes. Another interesting point is the occurrence of the joint affection in a case which is the outcome of the inherited poison. Since the Wassermann reaction has been introduced as a test for syphilis, I think there is little doubt that what hitherto have been looked upon as para-syphilitic affections, such as tabes dorsalis and general paralysis of the insane, must now be regarded as diseases dependent on the true syphilitic virus. These affections really occur in a quaternary stage of the disease. This possibly explains, what many have advocated, that anti-syphilitic treatment, though it will not cure tabes dorsalis, has a decidedly beneficial influence in the course of the disease and staying its progress.

This patient since admission to the hospital has been treated by rest and feeding, but also by small doses of mercury, and I think, with some benefit. Lately she received by intravenous injection 0·45 gramme of neo-salvarsan. This caused little or no disturbance beyond a little headache and slight rise of temperature (100 F.). This treatment would need to be pursued further before offering any opinion on its efficacy. She feels, however, much better than on admission.

17th September, 1913.—Since writing the above notes the patient has reported herself at the hospital. The general condition of the patient is much better, but the right knee-joint is much swollen and grates on movement. There is no doubt this joint is becoming involved in a similar way to the left hip-joint.

Case of syringomyelia.—Dr. Barclay Ness also demonstrated the chief facts in a case of syringomyelia. The patient had already been shown to the Society on 1st November, 1907, by Dr. A. J. Ballantyne, with special reference to the eye symptoms (see *Trans. of the Med.-Chir. Soc.*, 1909, vol. vii, p. 97).

VI.—BRAINS FROM SIX CASES OF CEREBRAL TUMOURS.

By Professor W. K. Hunter.

1. *Sections of brain* showing large tumour mass in each lateral lobe of cerebellum, as well as tumour in the region of the left optic thalamus. Tuberculous tumour.

Symptoms.—Pain in back of head, failing eyesight, with double optic neuritis. Dull mentally. No paralysis, but could not walk more than few steps on account of tendency to fall to the right. Plantar reflexes were flexor. No anæsthesia. Ultimately became very much emaciated and passed into comatose condition.

2. *Sections of brain* showing two tuberculous tumours in the right cerebrum.

The anterior is situated subcortical to the lateral frontal region, and extends from the level of the anterior limit of the lateral ventricle backwards to the level of the anterior surface of the pons. Posteriorly, it is situated immediately below and inside the Sylvian fissure, It seems to involve the external capsule and the outer and inferior part of the lenticular nucleus.

The posterior tumour is situated in the inferior and mesial aspect of the temporal lobe, extending from the pia mater covering the fourth and fifth temporal lobes upwards and outwards to the lateral ventricle, which it almost obliterates.

Symptoms.—Loss of power in left arm and leg of five weeks' duration; and *fits* (of a tonic character) for about three months, involving all four limbs.

The general symptoms of cerebral tumours were not marked. Child died with tuberculous meningitis.

4. *Vertical sections through brain* showing tumour situated, in the white matter, about the middle third of the right temporo-sphenoidal lobe.

Structure—cellular glioma.

Symptoms.—Headache, sickness and vomiting, giddiness with tendency to fall backwards and to the left, double optic neuritis. There was also some paresis of the legs, but the plantar reflexes were flexor. Speech was slow but correct.

4. *Vertical sections through brain* showing tumour growth involving a considerable extent of anterior third of left temporo-sphenoidal lobe. There is a second tumour growth at lower end of left post-central gyrus.

Symptoms.—Loss of memory, confusion of ideas, sleeplessness. Could not read or write more than a few isolated words; seemed to understand all that was said to him; speech fluent. No headache, no sickness, and no vomiting; optic discs normal. No paralysis.

5. *Vertical sections of brain* showing tumour the size of a

turkey's egg occupying the lower and outer part of the right frontal region, and almost the whole of the anterior part of the temporo-sphenoidal lobe. It measures 4 inches by $2\frac{1}{2}$ inches by $2\frac{1}{2}$ inches. Microscopically, a fibroglioma.

Symptoms.—Constant pain in head, giddiness, blindness with double optic neuritis and retinal hæmorrhages, drowsiness and stupor. There was also some hyperæsthesia of the left side, especially of the left arm. To begin with there was no paralysis, but when patient attempted to stand he tended to fall backwards; plantar reflexes were flexor. Later on there was flaccid paralysis of left arm and of both lower limbs.

Secondary tumours were found growing from the spinal pia.

6. *Horizontal sections of brain* showing tumour, cylindrical in shape, measuring 2 inches by $\frac{1}{2}$ inch by $\frac{1}{2}$ inch, with long axis vertical, and occupying the posterior part of the right cingulate gyrus.

On microscopic examination found to be a spindle-celled sarcoma.

Symptoms. — Headache, giddiness, vomiting, defective vision with double optic neuritis. There was some mental confusion, but patient could read and write. No paralysis of limbs, but when standing he tended to fall backwards and to the right. The right plantar reflex was flexor, the left extensor.

VII.—Dr. Alex. MacLennan showed stereo-photographs of the following conditions:—

1. Fibroma of internal popliteal nerve.
2. Lipoma of median nerve.
3. Sarcoma of external popliteal nerve.
4. Obstetrical paralysis.
5. Amputation neuroma (two cases).
6. Hernia cerebri (before operation—after first operation—after second operation).
7. Paralysis of spinal accessory nerve (two cases).
8. Paralysis of spinal accessory-paresis of fifth cervical root.
9. Cerebral diplegia.
10. Cerebral hemiplegia.

Dr. MacLennan also showed diagrams illustrating the method of protecting nerve-junction by section of excised vein.

MEETING XIV.—2ND MAY, 1913.

The President, DR. A. FREELAND FERGUS, *in the Chair.*

I.—MINERS' NYSTAGMUS: THE STAGE PRIOR TO NYSTAGMUS.

BY DR. W. B. INGLIS POLLOCK.

Dr. Pollock's communication was published as an original article in our issue for September, p. 178.

II.—EMPUSA MUSCÆ, AND ITS RELATION TO THE DISTRIBUTION OF BACTERIA.

BY DR. R. M. BUCHANAN.

[ABSTRACT.]

Dr. R. M. Buchanan gave a lantern demonstration of empusa muscæ, the well-known epidemic disease of house-flies, with special reference to the distribution of bacteria by the spores of the fungus.

In recent years the part played by the common house-fly as a carrier of infection has been the subject of much investigation, and it has been shown that the insect is capable of distributing infective material, not only by the surface of its body, but by way of its alimentary tract.

Another aspect of the question presented itself in the course of an enquiry as to the distribution of flies in the dwelling-houses in the city. In the end of August, and during September and October, a small proportion of the flies caught showed the characteristic disease due to the fungus empusa muscæ. The abdomen of the diseased fly was seen to be distended, and to have a black and white-ringed appearance, due to the eruption of the fungus between the chitinous segments. It was shown that the fungus did not confine itself to the abdomen, but spread to the thorax, the head, the limbs, and even to the proboscis and antennæ. The disease was almost entirely confined to the common house-fly (*Musca domestica*). In two instances only was it found in the lesser house-fly (*Fannia canicularis*). A familiar appearance was presented by a slide showing a fly sticking to the glass in a life-like attitude, and surrounded by a white halo formed by the spores or conidia thrown off by the fungus after growing out through the intersegmental membrane.

The farthest limit of conidial flight observed was about an inch and a quarter.

When a diseased fly was fixed head downwards in the centre of an agar plate, many of the conidia showered upon the nutrient surface were found to have carried bacteria with them from the body of the fly, by the fact that a large number of colonies developed within the zone covered by the conidia. On testing a number of diseased flies in this way a considerable variety of organisms was found, chiefly bacilli of the colon-paratyphoid-proteus group. In two instances an organism closely resembling staphylococcus aureus was found, but it failed to liquefy gelatine and proved non-virulent.

Sprouting of the spores and the growth of hyphal filaments on various agar media took place, but attempts to obtain a further growth were not successful.

It has been suggested that this fungus might be used for the extermination of the house-fly; but, in view of these experiments, the suggestion hardly commends itself.

A simplified method of anærobic culture.—Dr. Buchanan also demonstrated a simplified method for anærobic cultures in test tubes and flasks by means of a small inset tube.

III.—VALEDICTORY ADDRESS: THINGS OPHTHALMIC NEW AND OLD.

By Dr. A. Freeland Fergus.

Dr. Fergus's address was published as an original article in our issue for July, p. 1.

REVIEWS.

Diseases and Injuries of the Eye: A Text-Book for Students and Practitioners. By WILLIAM GEORGE SYM, M.D., F.R.C.S.E. London: A. & C. Black. 1913.

A VERY serious error at the commencement of this book, to the effect that the visual angle of Snellen's scale is one of five seconds, does not altogether prepossess the careful reader in favour of the work. It is true that the author does not use the word second but repeatedly uses the symbol, both in the text and in a diagram. We think it unfortunate that he does not use the word instead of the symbol, for students of medicine are not compelled, as yet, to learn trigonometry, and some of them may be unfamiliar with trigonometric notation. Now, let us examine his statement that the smallest angle subtended by a visible object is one second. If we take the radian as being 60 degrees instead of being 57, that would mean that at 20 feet, the distance at which Snellen's letters are usually employed, the arc of the radian would be about 20 feet. The arc corresponding to one degree would therefore be one-third of a foot, that is, 4 inches; that means that the arc for one second is about the 900th part of an inch, which implies that the letters of Snellen's lowest row, seen at six metres, should be only the 180th part of an inch. Dr. Sym is, possibly, a physicist as well as an ophthalmic surgeon, and he will no doubt fully appreciate this line of argument.

The book is entirely modern: that is, for the most part few of the subjects treated of are fully discussed. It is more a cram book than a text-book. No doubt it will have a considerable sale; the number of students attending the Medical School of Edinburgh involves that; but, with all respect to the author, it is not a book which we can recommend, for in certain respects it is not up to date. For example, we do not find any mention made of Smith's operation for cataract. Now that may or may not be an operation which has permeated to all medical schools, but in any case it is an operation which has come to stay and one which is admirably suited for certain circumstances. We entirely disagree with the author in saying that in needling for cataract after extraction, "Do as little as possible." We always make an exceedingly large opening in the capsule. If proper care be taken you will never have a tough capsule; that is always the result of sepsis, and nothing yields more easily to a large incision with a Knapp's knife than the thin filmy opacity found in the capsule after a thoroughly aseptic cataract extraction. We do not know what Dr. Sym means by mild antiseptics. The teachings of modern pathology seem to us to be the *sine quâ non* of all proper work of a surgical kind, and we think that they have been given far too little prominence in this book. Apart from these defects however, the volume may be useful to students who do not wish to read anything very serious on the subject. It contains a great deal of information.

No one for a moment doubts that Dr. Sym has a competent knowledge of the literature of the subject, and, although we do not think this book of the first order by any means, nor indeed representing Dr. Sym at his best, still it is quite as good as some others that have recently appeared.

We are surprised to find that details are still given as to how the inferior canaliculus should be slit. We had hoped that at last that operation had become extinct. What good is supposed to be done by destroying a structure such as the canaliculus we do not know. We have for many years regarded this operation as one that should never be undertaken, and we esteem as particularly dangerous the suggestion of using the canaliculus knife as a probe.

The Clinical Pathology of Syphilis and Parasyphilis. By HUGH WANSEY BAYLY, M.A., M.R.C.S., L.R.C.P. London: Baillière, Tindall & Cox. 1912.

THIS little book is intended for the use of the general practitioner and medical student, and not for the specialist in this department. In somewhat condensed form it presents the main facts regarding the parasitology of the disease, the Wassermann reaction, and the results of the examination of the cerebro-spinal fluid and the urine. Treatment by Salvarsan and mercury is detailed, and their effects, separately or in combination, on the Wassermann reaction are discussed in reference to the various stages of the disease.

Now that the literature on syphilis has become so extensive, and much of it very technical, we welcome the publication at a moderate price of a book of this kind which places the essential facts within the reach of those who may have neither the inclination nor the opportunity of studying the larger treatises on the subject.

The First Signs of Insanity: Their Prevention and Treatment. By Bernard Hollander, M.D. London: Stanley Paul & Co. 1912.

In his preface the author explains that the treatment of cases of mental disorder should be begun before the patient is certifiable, that it should be individual, and be carried on outside the walls of an asylum. From this point of view the book has been written, and is intended for any who may be interested in the subject.

Part I—on the first signs of insanity—includes a description of the mental powers, both normal and abnormal, which go to form mind and character; insanity is defined; disorders of the animal passions, of the social affections, of the intellect, and of the higher human capacities (genius), are separately discussed.

Part II deals with causation. Predisposition and an exciting cause are the admitted factors. The author laments the absence of adequate opportunities (in London) of treating cases before they are sufficiently advanced for certification, and attributes the increased number of certified lunatics to this. Alcoholism of the parents is one of the most important predisposing causes; where the mother is an abstainer the danger is not nearly so great. Insanity caused by intemperance of the individual is comparatively infrequent; but the defective self-control of persons predisposed to mental disorder readily leads to insanity, and such persons ought to be total abstainers. Before a man takes to drink there is a physical defect predisposing him to it. Toxic and other causes are briefly considered.

Prevention and treatment are the subjects of Part III. This includes a consideration of the mental functions of the brain, mental discipline as a preventive, psycho-therapeutics and hygiene, surgical treatment, private treatment, and the value of proposed preventive measures. The important relationship between the size and shape of the skull and those of the brain calls for closer study of the conformation of the head. By providing education suitable to each individual child, by teaching self-control, by choosing an occupation that will be congenial, and by encouraging habits of mental discipline, much may be done to prevent the occurrence of insanity in those predisposed. Hypnosis judiciously used is a valuable remedy in early cases. On p. 172 we read—"In the newly established clinics on the Continent 'padded-rooms' no longer exist," the implication being that they are still used in England.

In Part IV there is a detailed description of the signs and symptoms of the various forms of insanity and feeble-mindedness, and a chapter on insanity and the law.

Technical terms have been avoided as far as possible; commonsense characterises the volume, and it provides an *epitomé* of present-day knowledge which should prove useful to those interested in the subject. Although some of the views expressed are similar to those that are held by leading authorities in this country, the author has evidently been himself an active observer. The letter quoted on pp. 168 and 169 from the relatives of a patient might, we think, with advantage have been omitted in a book of this kind.

New and Non-Official Remedies, 1913. Chicago: American Medical Association. 1913.

This year-book continues to give the new and non-official remedies which conform to the rules of the Council on Pharmacy and Chemistry of the American Medical Association.

The remedies have been examined, but the council desires physicians to understand that the acceptance of an article does not necessarily mean recommendation, but that so far as known it complies with the rules of the Council. These rules are drawn up with the object of protecting the medical profession and the public against fraud, undesirable secrecy, and objectionable advertising in connection with proprietary medicinal articles.

We can most heartily recommend the book for the purpose of reference, to guide the practitioner in selecting remedies that are not official, and to show him to what extent the statements of manufacturers must in many cases be discounted. It is quite inexpensive, and it is much to be desired that a similar publication should appear in this country.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

MEDICINE.

Acute Thyroiditis as a Complication of Acute Tonsillitis.

By Clement F. Theisen, M.D. (*Albany Medical Annals*, August, 1913).—The author made an analysis of seven cases of acute thyroiditis. He found that, with the exception of one case, the inflammation of the thyroid gland followed attacks of tonsillitis.

Four of the patients have been seen from time to time during a number of years, and the writer's observations are based on these cases. Two of these patients have had, each, two distinct attacks of acute thyroiditis, each time with an acute tonsillitis, and both have developed well-marked diffuse goitres. In both cases, as well as the others, the inflammation of the thyroid occurred in a previously healthy gland of normal size. For this reason, and because in no case did suppuration occur, the cases belong to the class described by Mygind as "thyroiditis acuta simplex," particularly to distinguish them from cases of acute strumitis, in which the disease involves the already hypertrophied thyroid gland. Suppuration occurs much more frequently in this class of cases, and they are not as uncommon, occurring sometimes with pneumonia, measles, typhoid fever, influenza, diphtheria, &c.

The writer's patients were all girls and young women, and a search of the literature shows that this is true in the majority of the cases. The only case that did not occur with tonsillitis was one that developed during the course of a pneumonia. Two of the other patients had attacks of hyperthyroidism, with all the typical symptoms developing soon after the attacks of acute tonsillitis and thyroiditis.

The writer thinks that this is not an impossible method for goitre to develop. S. P. Beebe states that "a considerable number of these cases have enlarged tonsils and adenoids, and an acute attack of hyperthyroidism may follow promptly an acute attack of tonsillitis." He also says that "these patients often give a history of repeated attacks of acute tonsillitis preceding the development of a goitre, and that any acute throat condition should be avoided."

Lüche divides acute inflammations of the healthy thyroid gland into three forms—idiopathic, traumatic, and metastatic.

The writer prefers the classification of acute suppurative and acute simple thyroiditis. The latter disease is very rare, but several cases are to be found in the literature on this subject.

Simple acute thyroiditis must not be confused with acute hyperæmia of the thyroid gland, which is found among anomalies of menstruation and in acute infectious diseases. It is not uncommon in measles epidemics in Switzerland, where goitre is endemic.

The symptoms in cases of acute thyroiditis are quite characteristic. A symptom which is practically always present is dysphagia. This is largely mechanical, being due to the compression of the œsophagus, and is most marked when the swelling of the left lobe of the thyroid is very decided. This swelling may cause difficulty in the swallowing of liquids for several days. The writer is, however, of the impression that if some of the cases of acute thyroiditis are carefully studied, it will be found that the dysphagia is, partly at least, due to the intense acute angina which often precedes the attack.

Dyspnœa is also a frequent symptom, also caused by pressure and inflammation of the mucosa of the upper air passages. Symptoms of an acute infectious process are also present. An elevation of temperature is always found, but it is rarely high or prolonged. The swelling of the thyroid varies, but is usually considerable, accompanied by considerable congestion of the surrounding parts. D. Ross Kilpatrick.

One Case of Acute Multiple Neurotic Gangrene of the Skin. By Dr. Yamada (*Sei-i-Kwai Medical Journal*, July, 1913).—The author describes one case of the above, which can be summarised as follows :—

1. The disease has, without doubt, a neurotic origin.
2. Most of the cases which have been published belong to multiple cicatricial gangrene of the skin, but this case has a great similarity with that described by Dontrelpont.
3. The direct cause was a trauma, which the patient received on the outside of the ankle bone.
4. The diseases which come up for differential diagnosis are gangrenes due to carbolic acid, Raynaud's disease, syringomyelia, lepra, syphilis, septicopyæmia, ergot, and alcohol poisoning.
5. Histological and bacteriological examination of the vesicles of the diseased parts show the following changes :—A new epidermal layer was already formed under the gangrenous superficial epidermis, and no changes could be found in Malpighian bodies or their nuclei ; the lymphatic spaces were dilated ; the peripheral nerves were absolutely intact.

The bacteriological examination of the vesicular contents was negative.

—D. Ross Kilpatrick.

Adiposis Dolorosa in Sciatica : A Form Localised in the Affected Lower Extremity. By Drs. Favre and Toumade (*Lyon Medicale*, 11th May, 1913).—The writers have studied clinically the subcutaneous thickening of the cellular tissue of the affected lower limb in sciatica, which was described by Landouzy in 1875. It is easily demonstrated in picking up the integuments between the finger and thumb : it is not constant, but occurs especially in inveterate cases ; the limb may be greatly enlarged by this local adiposis, which is painful on manipulation : nodular thickenings may be present : it is very amenable to massage, directed especially to the nodules ; the cellular tissues also should be kneaded. The writers regard this panniculitis as trophic, and due to neuritis : in its turn it compresses and irritates the sensory nerve fibres, and so keeps up the neuralgic pain. But the circumscribed panniculitis is not always secondary. A case is quoted in which the cellulitis was apparently primary :—A young girl showed a plaque of tender induration on one buttock that developed in the course of a few days ; it was accompanied by radiating pains in the whole gluteal region : a year previously she had had a similar attack, which yielded to massage in a few days. —D. Ross Kilpatrick.

SURGERY.

Elimination of the Pylorus by Total Separation and Gastro-entero Anastomosis (end-to-side). By Dr. Dobbertin (*Zentralbl. f. Chirurgie*, 13th September, 1913).—Eiselsberg's method of total separation at the prepyloric part of the stomach with closure of both lumina is, without doubt, the ideal way of throwing the pylorus out of action. The operation is, however, unduly long and complicated, a serious disadvantage when enfeebled patients are being dealt with.

As a middle way, the author recommends prepyloric division of the stomach, with turning-in of the pyloro-duodenal orifice, followed by retrocolic implantation of the open mouth of the stomach into the jejunum. Briefly, the method is as follows:—

Portions of the gastro-hepatic and gastro-colic omenta, near the pylorus, but on the cardiac side of the ulcer, are tied off, and at this part the stomach is crushed across by Doyen's écraseurs. On the pyloric side of the crushed line the organ is ligatured, while on the opposite side the clamp is applied. The stomach is then divided between clamp and ligature. The pyloro-duodenal stump is turned in by purse-string suture, and the open mouth of the stomach is implanted into the side of a loop of jejunum through the opening in the mesocolon. A few stitches fix the anastomosis to the mesocolon.

The author claims that by this method the pylorus is entirely eliminated, a vicious circle is avoided with certainty, and the stomach contents are discharged in the physiological direction, while full use is made of peristalsis.

The operation is indicated in all ulcerative conditions at or near the pylorus, except those where there is marked deformity of the stomach, due to perigastritis or great induration.—CHARLES BENNETT.

Torsion of the Spleen simulating Ovarian Tumour—Splenectomy Recovery (*The Birmingham Medical Review*, 15th July, 1913).—Mr Beckwith Whitehouse reports the case of a young married woman, aged 30, who had, over a term of two months, three or four attacks of acute dragging pain in the abdomen, generally associated with vomiting. During the last attack, the temperature rose to 102° F., and the pulse to 120; the pain was hypogastric, and there was urgency and difficulty of micturition.

After abdominal and vaginal examinations, a diagnosis of solid neoplasm of ovarian origin was made, and immediate laparotomy undertaken. The mass proved to be the spleen with a long and broad pedicle twisted through three and a half complete turns. The organ, which showed areas of commencing necrosis, and had lymph on the surface, was then removed, and the patient made an uninterrupted recovery.

Blood-counts performed at the time of the operation, and on the thirteenth day afterwards, gave practically the same result.

The author has found from the literature that cases of "wandering spleen" generally occur in the female, and that they are often mistaken for those of gynaecological interest. The uterus is, as a rule, retroverted, and the blood, in nearly every case, shows a well-marked leucocytosis.—CHARLES BENNETT.

The Technique of Orchidopexy. By Arthur Schafer (*Zentralbl. f. Chirurgie*, 18th October, 1913). The author has abandoned the method he formerly employed, and now uses a combination of those of Witzel and Longard.

1. *In unilateral cryptorchism.*—The funiculus spermaticus is freed and stretched. Then Bassini's operation is performed on the hernia, usually present. The sound testicle is now pressed through a slit in the scrotal septum to the affected side. The two testicles are united by sutures, grasping the tunica albuginea only, applied on the mesial sides. A silk thread is

passed through the lower extremity of the ectopic testicle, led through the sound half of the scrotum, then brought outside and left long. Both testicles are now passed into the sound compartment of the scrotum, and the wound in the scrotum sutured. The funiculus of the affected side is sutured at the external inguinal ring. Finally, the long silk thread, attached to the ectopic testicle, is stitched, under easy tension, to the inner surface of the thigh on the sound side, and dressings are applied. After ten days the silk is cut off close to the scrotum.

2. *In bilateral cryptorchism.*—Both funiculi are freed and stretched, and Bassini's operation is carried out on the two sides. The testicles are stitched together as before, and a long silk thread is attached to each organ. Each thread is brought through the scrotal wall on its own side, and the wounds sutured. The threads are then crossed, so that each is attached to the opposite thigh.

The method has the advantage of technical simplicity, and renders plastic operations unnecessary, the latter of great importance on account of the difficulty in producing asepsis in the region concerned.—Charles Bennett.

The Transplantation of Hirsute Skin. By Victor Perimoff (*Zentralbl. f. Chirurgie*, 13th September, 1913).—In the *Zentr. f. Chir.* (No. 36, 1912), Lauenstein reported an unsuccessful attempt to transplant hirsute skin in the human being, and also referred to experiments conducted on dogs, with but little success.

This has encouraged the author to publish details of a successful case. In April, 1912, he was consulted by an officer who had an ugly star-shaped scar, 10 cm. by 5 cm., in the temporo-parietal region, which was quite hairless. The patient asked that a flap of hair-bearing skin should be transferred to his head from that of a Tartar, who was willing to undergo the operation. The two patients were anæsthetised together, and their heads well washed with soap and water. The scarred portion of the officer's scalp was cut out down to periosteum, and was replaced by a piece of the Tartar's scalp. The wounds healed by first intention, and the hair remained on the graft.

The author attributes the failure of others to the harmful effect of antiseptics, such as iodo-benzine, on the skin, and he thinks that the difficulty in the experiments on animals is in maintaining the necessary continuous contact of the parts.—Charles Bennett.

DISEASES OF CHILDREN.

The Comparative Value of Various Sugars in the Feeding of Infants. By Chas. C. Haskell, M.D. (*Archiv. of Pediatrics*, August, 1913, p. 572).—In a fairly large series of infants recovering from gastro-enteritis, or suffering from dyspepsia, the author has tested the value of lactose, saccharose, maltose, dextri-maltose, and "malt soup extract," as an addition to the diet. Although, theoretically, one would imagine that lactose would be the most efficient, yet it was found that the best results, so far as increase in weight and condition of the motions were concerned, were obtained with "malt soup extract." He doubts, however, if the same would be found in the case of the healthy infant.

	Gained in Weight.	General Condition Improved.	Stools became Worse.
Malt soup extract, .	82·35 per cent.	58·82 per cent.	23·52 per cent.
Lactose, . . .	51·50 ,,	27·27 ,,	33·33 ,,
Dextri-maltose, .	41·66 ,,	25·00 ,,	41·66 ,,

—Leonard Findlay.

A Study of the Wassermann Reaction in One Hundred Infants. By Drs. Kenneth D. Blackfan, S. T. Nicholson, and T. W. White (*American Journal of Diseases of Children*, 1913, vol. vi, No. 3, p. 162).—This investigation was suggested by that of Churchill (*Amer. Jour. Child. Dis.*, 1912, vol. iii, p. 263), who found that of 101 children taken at random, and not presenting clinical evidence of syphilis, 39 gave a positive Wassermann reaction: in 29 the family history was positive, and in 10 revealed no suspicion of syphilis.

The authors tested 101 children, whom they divided into two groups. In Group I, comprising 68 infants between 5 days and 29 months old, from a foundling hospital, and in which the family history and physical examination gave no suspicion of lues, a positive Wassermann reaction was obtained in 2. In Group II were 33 children varying between the ages of 2 weeks and 30 months, from the Out-Patient Department of the St. Louis Children's Hospital. In 3 of the cases the family history was suggestive of syphilis, but in only 1 case was a positive Wassermann reaction obtained.

—Leonard Findlay.

The Wassermann Reaction in Hereditary Syphilis, in Congenital Deformities, and in various other Conditions in Infancy. By L. Emmett Holt, M.D. (*Amer. Jour. of Child. Diseases*, 1913, vol. vi, No. 3, p. 166).—In this paper is described the author's experience with Noguchi's modification of the Wassermann reaction in various conditions in childhood.

Of 168 cases not clinically syphilitic, 11 gave a positive reaction. Of these latter cases 6 died, and at *post-mortem* examination 5 presented perisplenitis and perihepatitis sufficiently marked to allow of a diagnosis of syphilis, while 1 presented absolutely no evidence of lues; 3 were marasmic children, the mother of one of whom had had 3 miscarriages; in 1 case there was absolutely nothing suggestive of syphilis, and in another, suffering from gastro-enteritis, the family history was quite definite.

Among the negative cases the following conditions were represented:—

	Times.		Times.
Spina bifida,	10	Club-feet and hands,	1
Mongolian idiocy,	8	Marasmus and malnutrition,	57
Spastic diplegia,	6	Acute pneumonia,	16
Defective cerebral development,	6	Empyema,	5
Cystic kidney,	1	Tuberculosis,	7
Hygroma of neck,	1	Rachitis,	3
Congenital heart disease,	6	Tumour of brain,	2
Hare-lip and cleft palate,	5	Chorea,	2
Hydrocephalus,	6	Duodenal ulcer,	3
Exstrophy of bladder,	1	Encephalitis,	1
Microcephalus,	4	Poliomyelitis,	1
Pemphigus neonatorum,	1	Papilloma of larynx,	1
Meningeal hæmorrhage,	1	Chronic nephritis,	1
Scurvy,	1	Eczema,	1
Leukæmia,	1	Basilar meningitis,	1
Diabetes,	1	Acute arthritis,	1
Congenital obliteration of bile ducts,	1	Hernia,	1
Amaurotic family idiocy,	1	Convulsions,	1
		Ulcerative stomatitis,	1

—Leonard Findlay.

The Luetin Reaction in Infancy. By Alan Brown, M.D. (*Amer. Jour. of Child. Dis.*, 1913, vol. vi, No. 3, p. 171).—Record of 134 tests in 34 children suffering from congenital syphilis and in 100 apparently non-syphilitic children. Of the syphilitic cases all but 4, in which the disease was extremely severe, gave a positive luetin reaction. Of the 100 controls 96 were definitely negative and 4 gave a doubtful reaction, and in only 1 case, viz., a child of 14 months with von Jaksch's anaemia, did the blood give a positive Wassermann reaction.

In 14 infants the test was repeated after treatment with salvarsan, when it was found to behave as the Wassermann reaction did.—Leonard Findlay.

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The Control of Measles. Medical Officers of Schools' Association. London: J. & A. Churchill. 1913. (1s. net.)

Blood-Pressure in General Practice, by Percival Nicholson, M.D. With 7 illustrations. London: J. B. Lippincott Company. (6s. net.)

A Companion to Manuals of Practical Anatomy, by E. B. Jamieson, M.D. London: Henry Frowde and Hodder & Stoughton. 1913. (6s. net.)

Orthodontie, De quelques résultats, by Emmanuel Gallavardin. 127 illustrations. Paris: J. B. Baillière & Fils. 1913.

An International System of Ophthalmic Practice, edited by Walter L. Pyle, A.M., M.D., Philadelphia. Ophthalmic Semiology and Diagnosis, by Charles H. Beard, M.D. With 13 coloured plates and 71 figures in the text. London: Rebman, Limited. 1913. (21s. net.)

County Council of Fife: Annual Report on the Health and Sanitary Condition of the County District. Cupar-Fife: J. & G. Innes. 1913.

Guide to the Microscopic Examination of the Eye, by Professor R. Greeff, with the co-operation of Professor Stock and Professor Wintersteiner. Translated from the third German edition by Hugh Walker, M.A., M.B., C.M. London: The Ophthalmoscope Press. (7s. 6d. net.)

Oxford Medical Publications. Diseases of the Heart, by James Mackenzie, M.D., F.R.C.P., LL.D.Ab. and Ed., F.R.C.P.I. (Hon.) Third edition. London: Henry Frowde and Hodder & Stoughton. 1913. (25s. net.)

Compendium of Regional Diagnosis in Affections of the Brain and Spinal Cord: A concise introduction to the principles of Clinical Localization in Diseases and Injuries of the Central Nervous System, by Robert Bing. Translated by F. S. Arnold, B.A., M.B., B.Ch.(Oxon.) Second edition, revised and enlarged. With 73 illustrations. London: Rebman, Limited. (10s. 6d. net.)

The Practical Medicine Series (Second edition, Chas. L. Mix, A.M., M.D.). Vol. VI—General Medicine, edited by Frank Billings, M.S., M.D., and J. H. Salisbury, A.M., M.D. Series 1913. ($1·50.)

Vol. VII—Obstetrics, edited by Joseph B. De Lee, A.M., M.D., with the collaboration of Herbert M. Stowe, M.D. Chicago: The Year Book Publishers. 1913. ($1·35.)

Hospital of The Protestant Episcopal Church in Philadelphia: Medical and Surgical Reports of the Episcopal Hospital. Vol. I. Philadelphia: Wm. J. Dornan. 1913.

Manual of Surgery, by Alexis Thomson and Alexander Miles. Vol. III—Operative Surgery. With 255 illustrations. Second edition. London: Henry Frowde and Hodder & Stoughton. 1913. (10s. 6d. net.)

Treatment by Hypnotism and Suggestion or Psycho-Therapeutics, by C. Lloyd Tuckey, M.D.Aberd. Sixth edition, revised and enlarged. London: Baillière, Tindall & Cox. 1913. (10s. 6d. net.)

Modern Problems in Psychiatry, by Ernest Lugaro. Translated by David Orr, M.D., and R. G. Rows, M.D. With a foreword by Sir T. S. Clouston, M.D., LL.D. Manchester: University Press. 1913.

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDED 15TH NOVEMBER, 1913.

	WEEK ENDING			
	Oct. 25.	Nov. 1.	Nov. 8.	Nov. 15.
Mean temperature, . .	47·1°	50·9°	45·9°	44·6°
Mean range of temperature between highest and lowest,	12·0°	10·4°	11·4°	10·4°
Number of days on which rain fell, ...	6	6	5	6
Amount of rainfall, . ins.	0·23	0·63	0·89	1·57
Deaths (corrected), . .	286	310	285	338
Death-rates, ...	14·6	15·8	14·6	17·3
Zymotic death-rates, . .	1·4	1·1	0·9	1·0
Pulmonary death-rates, .	2·7	3·9	3·7	4·3
DEATHS—				
Under 1 year, . . .	75	66	67	70
60 years and upwards, .	53	72	65	80
DEATHS FROM—				
Small-pox, ...	...	...	...	...
Measles, ...	11	12	5	16
Scarlet fever, . . .	5	5	4	1
Diphtheria, . . .	3	6	5	1
Whooping-cough, . .	4	3	1	1
Enteric fever, . . .	4	1	...	...
Cerebro-spinal fever, . .	...	2	...	2
Diarrhœa (under 2 years of age),	9	18	11	12
Bronchitis, pneumonia, and pleurisy, . . .	33	44	41	55
CASES REPORTED—				
Small-pox, ...	...	...	...	...
Cerebro-spinal meningitis, .	1	1	...	2
Diphtheria and membranous croup, ...	55	56	68	51
Erysipelas, . . .	42	28	44	36
Scarlet fever, . . .	110	150	144	142
Typhus fever, . . .	4*	...	...	...
Enteric fever, . . .	9	3	5	3
Phthisis, ...	44	32	32	44
Puerperal fever, . .	2	7	5	2
Measles,† . . .	202	207	193	276

* Three cases proved not typhus.

† Measles not notifiable.

SANITARY CHAMBERS,
GLASGOW, 21st *November*, 1913.

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